Specialized Oil Publications of
THE GULF PUBLISHING COMPANY

The OIL WEEKLY and The COMPOSITE CATALOG for the drilling-producing-pipeline industry

PETROLEUM REFINER and The REFINERY CATALOG for the refining-natural gasoline industry

LOOKING AHEAD
... with the Editor

WATER injection of underground reservoirs to supply artificially developed energy to partly depleted reservoir rocks and thus increase the rate of oil production has been in general use in oil field engineering for several years. A similar process also serves merely as a means of disposing of an annoying byproduct.

It is becoming more generally recognized that both purposes may be combined in one operation. The water is injected into the reservoirs through wells; and the efficiency of the whole process depends, in large measure, on their intake capacities.

A study of the behavior of these injection wells is worthwhile, to inquire why wells in the same area often have different water-intake capacities, and to learn why intake capacities vary with time in any one well.

Some of the problems arising from input-well behavior are discussed in a paper titled "Behavior of Water-Input Wells" by Parke A. Dickey, Quaker State Oil Refining Corporation, and Kurt H. Andresen, South Penn Oil Company, both of Bradford, Pennsylvania, to be presented before the American Petroleum Institute Division of Production at the Twenty-fifth Annual Meeting in Chicago, November 15. The paper was prepared as a study sponsored jointly by the API Topical Committee on Production Technology and the Institute's Subcommittee on Secondary Recovery methods.

This paper will be published by THE OIL WEEKLY in four installments, the first installment to appear on November 19.

The OIL WEEKLY

ENGINEERING • NEWS • STATISTICS

Published by THE GULF PUBLISHING COMPANY, Houston, Texas

R. L. DUDLEY, *President, Publisher* — A. L. BURNS, *General Manager*

TOM W. NELSON, *Advertising Manager*

ADVERTISING STAFF

DICK SWINSKY.....New York
ROBERT B. FARSON.....Cleveland
H. G. FITZPATRICK.....Chicago
J. F. CARTER, JR.....Tulsa
J. W. CURTS.....Los Angeles
CHAS. WYATT.....Houston

BRANCH OFFICES

NEW YORK.....250 Park Ave. (17)
CLEVELAND.....1010 Euclid Ave. (15)
PITTSBURGH.....429 Fourth Ave. (19)
CHICAGO.....332 S. Michigan Ave. (4)
LOS ANGELES.....W. W. Wilson Bldg. Huntington Park, Calif.
TULSA.....Hunt Bldg. (3)
FORT WORTH..W. T. Waggoner Bldg. (2)
WASHINGTON.....Albee Bldg. (5)

CIRCULATION DEPARTMENT

G. D. CROFTON.....Manager

ABC

Member Audit Bureau of Circulation and Associated Business Papers, Inc.

ABP

EDITORIAL STAFF

WARREN L. BAKER
Editor

SILAS B. RAGSDALE
Managing Editor

L. J. LOGAN
Associate Editor

DISTRICT EDITORS

BERTRAM F. LINZ.....Washington
H. H. KING.....Fort Worth
GEORGE O. IVES.....New York
ANTHONY GIBBON.....Tulsa
R. W. BYRAM.....Austin
A. R. McTEE, AL REESE, WELDON B. HILL, HARRY A. HESS.....Houston

Contents • November 12, 1945

Volume 119, No. 11

The Changing Panorama 51

Technical and Feature Articles:

API Celebrating Silver Anniversary 54
By WELDON B. HILL

API Silver Jubilee Program 58

Pemex Has Active Drilling Program 62

Field Installation of Slush Pump Piston Rod Lubricators 68
By HARRY A. HESS

Drilling Equipment Needs 70
By DOUGLAS RAGLAND

Radiotelephone Aids Pipe Line Maintenance 76

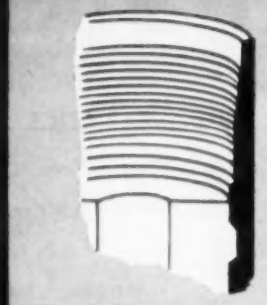
Potentiometric Titration of Iron 78
By W. F. OXFORD, JR.

Production Hints 90

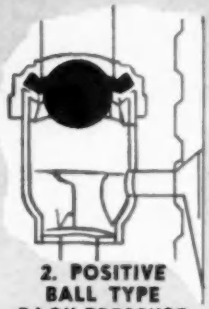
News and Departments:

Looking Ahead 49
The Outlook 97
The Week's News 99
Market Trends 107
Pipe Line News 108
International News 110
Field Operations 112
Squeaks from the Bull Wheel 136
Men in the Industry News 137
Book Review 140
New Equipment, Literature 141
Index to Advertisers 144

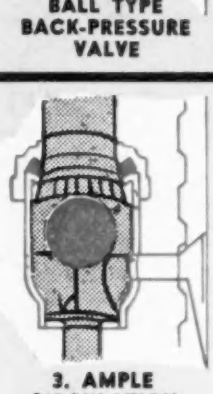
Published Every Monday. Single Copies 15 cents (Except Special Issues). Subscription price: domestic and foreign, $2.00 a year; 2 years, $3.00; 3 years, $4.00. Advertising rates on application. **Copyright 1945 by The Gulf Publishing Company.**



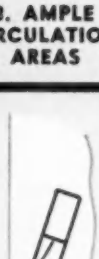
1. STRENGTH



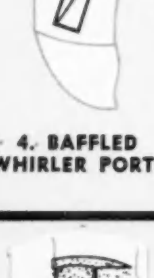
2. POSITIVE BALL TYPE BACK-PRESSURE VALVE



3. AMPLE CIRCULATION AREAS



4. BAFFLED WHIRLER PORTS



5. EASY DRILLABILITY

Landing & Cementing Casing

PRODUCT 120
Baker Cement Wash-Down Whirler Float Shoe

Do It Right and Do It the First Time With A BAKER CEMENT WASH-DOWN FLOAT SHOE

Here's why the Baker Cement Wash-Down Whirler Float Shoe provides best possible assurance of first-time successful results when landing and cementing casing.

1. *Strength*—The seamless steel casing shoe into which the concrete plug and plastic Ball-Type Valve Assembly are securely anchored, provide a unit that has the *strength* to float the longest and heaviest string of casing with an ample factor of safety.

2. *Positive Leak-Proof Back Pressure Valve.* The buoyant plastic Ball-Type Back-Pressure Valve floats in the cement slurry or rotary mud and instantly forms a leak-proof double seal against a narrow, tough rubber ring (backed by plastic and concrete) at the slightest reversal of pressure.

3. *Ample Circulation Areas.* The correctly designed, streamlined Valve Assembly provides passageways ample for any circulating or cementing operation.

4. *Baffled Whirler Ports.* These whirler ports provide the important wash-down whirler action so advantageous in circulating and cementing operations. When the fluid strikes these baffled ports, a downward and then an upward whirling motion results. In running in, this whirling action provides a means of effectively washing away bridges. During cementing, the whirling action imparted first to the fluid preceding the cement slurry and then to the slurry itself, properly prepares the hole to receive the cement. It then assures best possible distribution of a uniform body of cement around the shoe and the shoe joint, reducing the hazard of channeling to a minimum.

5. *Easy Drillability.* Complete and easy drillability results from the internal construction of Baker Formula Concrete and Plastic . . . the Plastic Ball-Type Valve Assembly being set on end in the concrete plug to present a minimum cross-sectional area to the drilling bit. The concrete and Plastic are quickly and easily drilled up and circulated out of the hole.

BAKER OIL TOOLS, INC.
Houston—LOS ANGELES—New York

The Changing Panorama

A New Crop of Experts

— An Editorial —

WE ARE now meeting a new crop of experts, economists whose background is even more dubious than that of some of the starry-eyed dreamers of the early New Deal. These new experts are the labor leaders themselves, or many of them, particularly those in the CIO.

They can tell to a gnat's eyebrow just exactly what an automobile manufacturer's costs are. They know, intuitively, just how much they can add for wages and make a profit! We wonder! And we wonder just how much profit, if any, they would allow if they had the control.

Not long ago we saw a new high point in vicious arrogance when Reuther, as quoted in the daily press, so far exposed his hand in the case of General Motors as to indicate that if G. M. didn't knuckle under to his demands, the company would be "utterly destroyed." Of what value would be the business opinion of an economist to a company if he had publicly expressed such venom toward the company using his analyses?

And now, in the face of a demand for higher pay, representatives of this CIO union with which Reuther is connected, place themselves (as recorded in the public print) as ready to oppose the new prices of automobiles if they think they are too high! Doesn't that surely expose their hand? Doesn't that indicate that they do desire the serious damage, if not the destruction, of the concern which affords a livelihood for their members? Are CIO members so dumb that they cannot see where they are being led? Are they so docile that they will blindly follow their leaders toward the destruction of their own jobs or the ruination of any chance for increased compensation in the future?

We do not know how well the financial affairs of Reuther's union are handled (that is a holy secret under our present laws) but even he must surely know that there is a vast difference between a business operation where orders must be created, production maintained, and a proposition where the dues come rolling in, collected in many instances under governmental mandate, by the very companies at which his likes continually keep their weapons pointed.

It is amusing to note that these experts who are so competent in knowing how to run a manufacturer's business, cannot efficiently collect their own dues without the help of the company!

Companies Efficient In Pollution Work

EFFICIENCY of the installation for prevention of pollution at the Puerto la Cruz loading terminal on the northern Venezuelan coast is attested by performance over a 6-year period since the port was placed in operation.

A representative of THE OIL WEEKLY, visiting the port recently, reports that notwithstanding the large volume of oil loaded out from the Mene Grande 1328-foot dock, nowhere on the harbor can be seen any oil slick, or so much as a "rainbow show" on the surface of the water.

The loading dock can comfortably accommodate two of the largest tankers afloat, and loading by gravity alone, port facilities can deliver to the boats at rates as great as 50 percent more than the tankers themselves can handle.

Loading lines run through pits below the dock level, and all above-dock connections are so placed that all oil spilled from hose lines or connections will go through drains to be trapped in the pits, where it is picked up and returned to the sumps.

At the Chaurie terminal of Compania Consolidada de Petrolea, just east of the Mene Grande terminal and on the same harbor, great care has also been taken to prevent pollution by essentially the same methods, and it, too, is completely free of pollution. This terminal was put in operation in August of 1943, coincidentally with lessening of danger from German U-boats, although it had been ready for shipment of oil since June of 1942.

The problem of disposal of ballast from incoming tankers has been of primary importance, but each company has solved it by providing special sumps and tanks, removed from the harbor area itself, where settling facilities are provided, oil is reclaimed, and water is dissipated by seepage, or treated and carried off through special drains.

Getting the Public Clear on "Reserves"

AN executive of a large oil company has written THE OIL WEEKLY as follows:

"As I grow older, I seem to be subject to periods of high blood pressure when I see certain mis-statements emanating from Governmental sources. The thing that particularly riles me at the moment is the report of the testimony before the Senate Committee by one E. W. Pehrson of the Bureau of Mines (Daily Summary and Analysis, Bureau of National Affairs, Incorporated, No. 212, dated October 30) in which it is reported that he presented a chart on which the exhaustion point of petroleum was placed at 18 years.

"I believe one of the greatest fallacies that has been popularized recently is the fact that some day, eighteen years or so from now, we will wake up in the morning and find all of our petroleum exhausted. This, of course, arises from the statistical approach of dividing the current daily demand into the estimated future reserves which results in a figure which has absolutely no meaning, since you and I know that the rate of production follows a decline over which we have relatively little control, and that the critical point is not the statistical quotient obtained in the above manner, but the point at which the curve of demand crosses our ability to supply. In other words, we may still be producing at the rate of several million barrels a day long after we have passed our ability to meet current demands.

"I am wondering if there is not something you could do to correct this misapprehension which, I believe, is working definitely to the detriment of the oil industry."

We have often wondered if there were any way to correct the interpretation the public puts on the "so-many-years-supply" estimates of reserves. Of course the people who make the estimates and convert them into years' supply understand that we shall not run up, full blast in production, until the eighteenth or twentieth year and then awaken the next morning to find that all oil wells are dry. But the public doesn't understand it.

When it is pointed out that at various times in the past estimates on proven reserves have been made, setting the

WORLD EXPERIENCE FOR TOMORROW'S PIPE LINES

Since they laid their first pipe line—18 miles of 8" natural gas line in Arkansas—in 1915—Williams Brothers Corp. and affiliated companies have built more than 30,000 miles of pipe lines; scores of pump stations. Their operations have covered swamps, rivers and mountains in all sections of the United States; in Canada and South America.

The past three years have found the Williams Brothers army of trained engineers, skilled workmen and modern equipment engaged in the building of important new pipe lines and enlarging existing facilities in America; in the execution of important contracts in other countries for quick, dependable, uninterrupted transportation of crude oil from producing fields to refining, storage and shipping centers.

Your own future pipe line requirements any place in the world may be discussed, planned and projected in secrecy and with complete confidence in the experience, skill and integrity of this organization.

WILLIAMS BROTHERS CORP.

GENERAL CONTRACTORS ***ENGINEERS***

Oil • Gas • Gasoline • Water

Pipe Lines and Pump Stations

NEW YORK • TULSA • ATLANTA • HOUSTON

amount as the equivalent of "seven years supply," "12 years supply," "20 years supply," and that at a time 15 or 20 years later, the estimate included another 20 years' supply, the inclination of the public is to feel that there is no dependence to be had in the estimates.

As a matter of fact, the public cannot be blamed for this because we have heard within the oil industry some of the earlier estimates ridiculed when, based upon the areas then proven, those former estimates were pretty soundly made.

The trouble seems to be in the desire of the press to reduce to terms the public can understand, information which varies from year to year as new production is found. Equally as important to the public, but unknown to it in calculating its supply, is the changing complexion of demand and what is happening in the research laboratories of the refineries of the nation and in the engineering departments of manufacturers of internal combustion power.

We recall that when the Committee of Twenty-five made the first API estimate on reserves many years ago, attention was called to the increasing percentage of gasoline being taken from a barrel of crude oil. The trend noted then has not slackened and it seems safe to suggest that with continued improvements in refining, plus continued improvements in design of automobile and other internal combustion engines, a greater fuel demand can be satisfied from a smaller supply of oil in the future.

Of course everyone in the oil business knows that we have not stopped discovering oil within the confines of the United States. Even the public must have a suspicion that new oil reserves are being added each week.

We all know, too, that our oil supply in the United States is not inexhaustable, but we know equally as well that we have reserves outside of the United States on which we can draw as we need them. Nor can we agree with some operators who seem to think that when we import oil we are dealing a death blow at domestic industry. We can think of no quicker way to invite a governmental take-over than for the industry not to be in position to supply such demand as our country may present—not that the government could do any better than the oil industry is doing. As a matter of fact we believe that it could not do nearly as well (witness Canol), but there seems to be something in the minds of some governmental officials which causes them to think that the glaring mistakes they have made in other matters will not be equaled by what they would likely do in matters with which they have not as yet concerned themselves. Oil is one of these matters.

Foreign Operations Expensive Business

OIL development outside the United States frequently is very expensive by United States standards, being sometimes prohibitive except by interests with vast capital. Some specific information on such costs is embodied in a report recently filed with the United States Senate petroleum investigating committee. It reveals the experience of 11 United States companies operating abroad.

The foreign operations involve heavy expenditures for exploration work and for production, storage, and transportation facilities, and there is long time lag between initial investment and initial returns. Oil companies usually must build houses, camps, highways, and drill their own wells, after long periods of exploration without income. Many undertakings never gain income at all or never pay out. Recovering the large pre-production costs is a large part of the total cost of producing any oil discovered.

Here are examples. Creole Petroleum Company started exploration in Venezuela outside the Maracaibo basin in 1920 and spent $48,335,063 before moving the first oil to market 10 years later. Another company started work on a concession in 1925 and spent $44,000,000 in the next 14 years before marketing oil for the first time. A third concern spent $26,900,000 in Venezuela between original investment in 1934 and first marketing 10 years later. In Colombia the International Petroleum Company made original investment in 1916, drilled a productive well 2 years later, but before getting oil to seaboard market 8 years later had invested in development, pipe lines, and other facilities $48,600,000. To develop the Barco concession and its necessary adjunct, a pipe line, between 1916 and 1939, required $60,310,000. A third company in Colombia spent $1,044,790 for concessions and in the following 10 years spent $7,642,477 more for development, and has not yet marketed a barrel of oil.

In the Middle East the Iraq Petroleum Company spent 9 years and $62,000,000 to market its first oil, and that amount included nearly $15,000,000 put up by American interests as their share. In the Netherlands East Indies the Standard Vacuum Oil Company spent 10 years and $12,584,000 before discovering oil and then spent 4 years and $8,838,000 more in marketing its first oil. In that same region another company needed 8 years beginning in 1931 and $5,619,000 to make a discovery and it still has not marketed any oil. In Venezuela two companies found it advisable to run thousands of miles of transit lines in mapping a concession, surveying the whole boundary of a state and all district and municipal lines therein besides many private properties. Despite its several rich fields, Mexico was the sinking ground of millions of dollars by unfortunate companies, and the "Golden Lane" originally meant the narrow belt attracting millions of dollars that might never be returned in oil.

The report gave numerous examples of companies that finally gave up as failures their foreign ventures that had entailed from 1 to 5 million dollars.

These experiences do not prove foreign operation futile or even unprofitable, but they show that any success usually is slow to come and well earned by great perseverance backed up by heavy investment.

Long Service Record Is a Mutual Affair

RECENTLY the *Red Triangle*, publication of Continental Oil Company, showed pictures of 87 Continental employes who have achieved 25 years of service with the company. Each has been awarded a diamond-studded badge emblematic of his long membership in the company family.

In extending congratulations to the veteran workers, the *Red Triangle* observed: "When a man works for the same company for many years, taking promotions and increased responsibilities as they come, it is evidence of two things: the man has a strong sense of loyalty and fidelity in his company, and the policies of the company are such as to warrant and deserve his loyalty."

One-room schools in this country have dropped from 200,000 in 1915-16 to 113,600 in 1939-40, and it is no accident that this drop occurred in the years of the great growth of the automobile.

Second annual banquet of American Petroleum Institute, Chicago, in 1921

1919 1945

API Is Celebrating Silver Anniversary

By WELDON B. HILL, Staff Writer

THE American Petroleum Institute, which was an outgrowth of the nation's World War I oil administration, this year celebrates its Silver Anniversary—delayed one year by World War II.

Actually, API was organized in 1919, but did not hold its first annual meeting until the fall of 1920. For 26 years it has served as the national organization for all branches of the petroleum industry. The original Silver Anniversary meeting was scheduled a year ago, but was cancelled at the request of the Office of Defense Transportation in order not to disturb the transportation of military personnel.

During its 26 years of existence, the Institute is credited with much of the cooperative work that has enabled the petroleum industry to make giant strides technological, engineering and scientific development. The Institute also has achieved success in promoting a national code of practices for marketing refined products, in standardizing oil field equipment, has aided in the solution of such industry problems as overproduction of oil and the development of a sound conservation policy, and fought the encroachment of government upon private enterprise.

Current Meeting Important

Even with these monumental problems behind it, API this week holds one of the most important annual meetings in its history. Problems arising from four years of war must be ironed out. The petroleum industry has succeeded in oiling a second world war and now it must go about the business of reconverting to a peacetime basis.

The many postwar problems relating to the oil industry in general cannot be solved at this meeting, but the groundwork to success may be laid.

The growth of API may be found in the number of registrations at the annual meetings, and in the number of committees that meet during these conventions. Ten years ago some 50 committees convened at the average annual meeting; in recent years more than 100 committees usually have sessions. A few years ago the number of speakers at annual meetings was less than 20. The number of papers presented in recent years has approximated 50.

Attendance at annual meetings has grown steadily, until the convention now is one of the largest in the world. Registrations at the first meeting, in Washington, D. C., November 17-19, 1920, was only 420. Annual meetings have been held in Chicago, St. Louis, Fort Worth, Los Angeles, Tulsa, Houston, Dallas, and San Francisco, with the peak attendance marked up in 1935, when registrations totaled 3141 at Los Angeles. Attendance has exceeded 3000 on five occasions.

Data on API annual meetings follow:

Year	Place	Registrations
1920	Washington	420
1921	Chicago	537
1922	St. Louis	636
1923	St. Louis	1041
1924	Fort Worth	1253
1926*	Los Angeles	1603
1926*	Tulsa	2104
1927	Chicago	1772
1928	Chicago	1861
1929	Chicago	2190
1930	Chicago	2198
1931	Chicago	1740
1932	Houston	1822
1933	Chicago	1817
1934	Dallas	3125
1935	Los Angeles	3141
1936	Chicago	2296
1937	Chicago	2386
1938	Chicago	2695
1939	Chicago	3115
1940	Chicago	3046
1941	San Francisco	3000
1942	Chicago	2174
1943	Chicago	2751

*Two annual meetings held in 1926, one in January, instead of the 1925 annual meeting, and one in December.

Early Organization

Incorporated under the laws of the District of Columbia in 1919, the main objective of the API is to promote, in general, the interests of the petroleum industry in all its branches, and to promote the mutual improvements of its members and the study of the arts and sciences connected with the petroleum industry.

The American Petroleum Institute emerged from the National Petroleum War Service Committee, oil division of the United States Fuel Administration of World War I, and members of the committee formed the nucleus of the first API officers and board of directors.

The 1919 organization meeting of the API was held in the Roman Room of the Biltmore Hotel in Washington, D. C., and was presided over by the late A. C. Bedford, then chairman of the board of Standard Oil Company (New Jersey). Mark Requa, director of the oil division of the U. S. Fuel Administration in 1918, sponsored the formation of API.

The late Thomas A. O'Donnell, California oil producer and then director of production, oil division, was elected first president of API and served until 1924.

Other officers elected at the organization meeting included Samuel Messer, Oil City, Pennsylvania, vice president of manufacture; Henry L. Doherty, New York, Cities Service Oil Company, vice president of production; J. W. Van Dyke, Philadelphia, The Atlantic Refining Company, vice president of distribution; H. F. Sinclair, New York, president, Sinclair Oil & Refining Company, treasurer; R. L. Welch, New York, general secretary and counsel, and C. C. Smith, New York, assistant general secretary and assistant treasurer.

Nine Presidents

During the 26 years of its history, the API has been served by nine presidents: O'Donnell, 1919-1924; J. Edgar Pew, 1925; W. S. Farish, 1926; E. W. Clark, 1927-1928; E. B. Reeser, 1929-1931; Amos L. Beaty, 1932; C. B. Ames, 1933 (January 1 to May 17); Axtell J. Byles, 1933-1941; and William J. Boyd, who has served since the death of Byles in late 1941.

Boyd, who still gives his address as Teague, Texas, and New York, appeared in the API offices in 1920 with no specific job, but a few months later became assistant to Welch, then general counsel and secretary. The team of Welch and Boyd handled the legal affairs of the Institute and was largely responsible for setting up the entire organization of API.

On the death of Welch, Boyd took over additional responsibilities, and in 1929 was elected executive vice president.

Boyd became president at the death of Byles and guided the nation's oil industry during its preparedness period before World War II. The day after Pearl Harbor, a group of oil men called upon the Petroleum Coordinator for War to organize a petroleum advisory council to government. Boyd became chairman of the council, which was sim-

Second annual banquet of American Petroleum Institute, Chicago, in 1921

KEROTEST

CHRISTMAS TREES

Licensed under Patents of Gray Tool Company

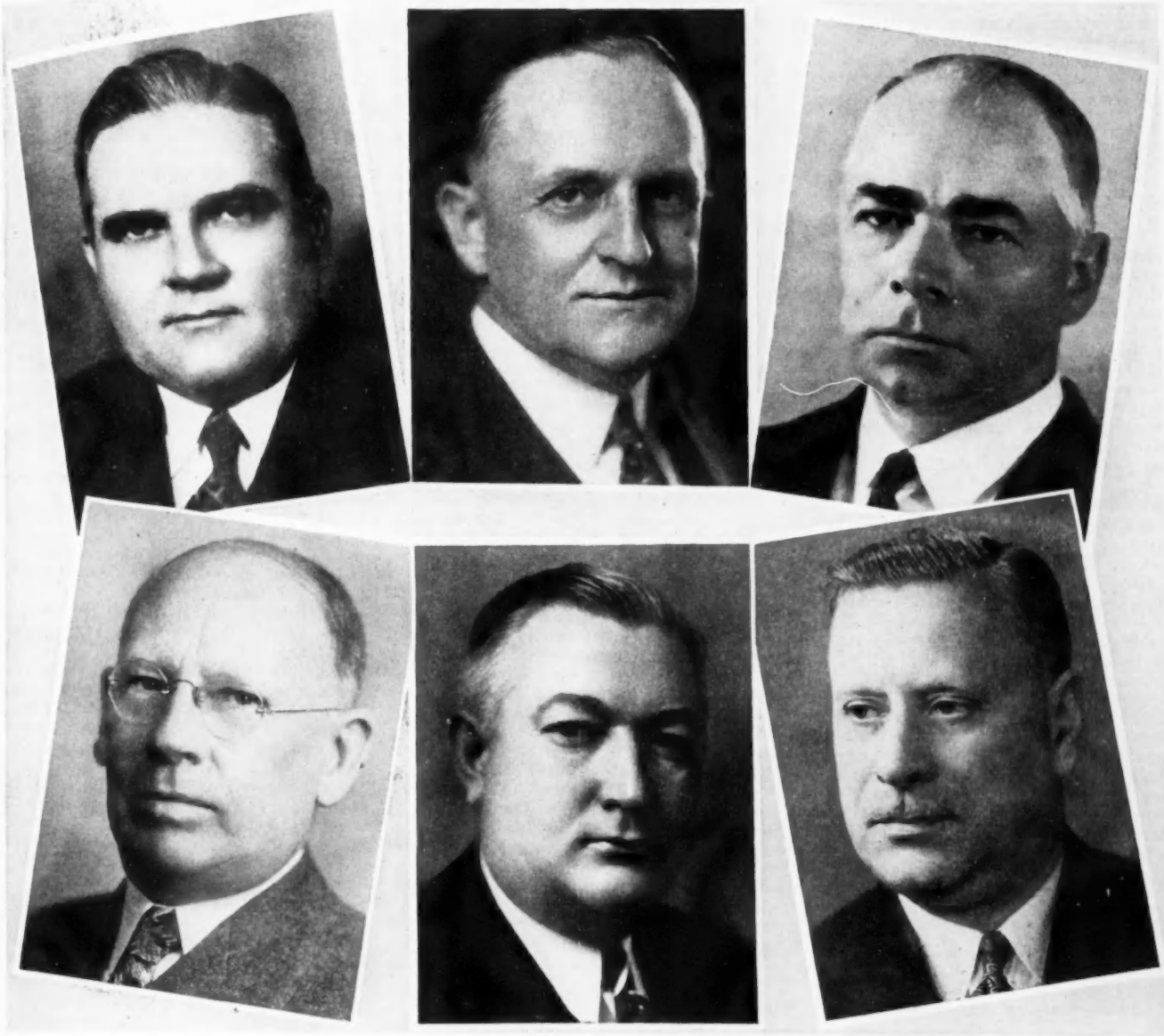
To meet your
specific requirements
any pressure
any size
any service condition

Kerotest engineers will welcome the opportunity of working with you in designing and building a complete control system that will most successfully and economically meet your operating conditions.

KEROTEST MANUFACTURING COMPAN
PITTSBURGH 22, PA.

BRANCH OFFICES:

CHICAGO, 568 Randolph St. NEW YORK, 60 E. 42nd St. LOS ANGELES, 3311 E. Slauson
HOUSTON, 805 2nd National Bank Bldg. ODESSA, TEX., Box 1146



Officers of American Petroleum Institute, which is holding its 25th meeting this week in Chicago. Left to right, top row: George A. Hill, Jr., vice president; division of production; William R. Boyd, Jr., president; and J. Howard Pew, vice president, dvision of refining. Below, left to right: O. D. Donnell, treasurer; Lacey Walker, secretary and assistant treasurer, and E. V. Weber, vice president, division of marketing.

ilar to the one formed during World War I.

The management of Institute affairs is entrusted to the president, vice president for production, vice president for marketing, vice president for refining, treasurer, secretary and assistant treasurer, elected annually by the 110 members of the board of directors who serve for two-year terms, half of which are named each year.

The present officers of API, other than Boyd, are George A. Hill, Jr., Houston Oil Company of Texas, vice president for production; J. Howard Pew, Sun Oil Company, vice president for refining; E. V. Weber, Eureka Oil Company, vice president for marketing; O. D. Donnell, Ohio Oil Company, treasurer; and Lacey Walker, secretary and assistant treasurer.

Walker was statistician of the Western Petroleum Refiners Association, with headquarters in Chicago, before joining the API staff as head of the statistical department on January 15, 1921. He was elected to his present position in November, 1928. The tremendous amount of detail involved in successfully operating a national trade association and making arrangements and supervising its annual meetings fall heavily on Walker's capable shoulders.

Robert E. Allen heads API's Department of Information. Allen was born and reared in West Virginia oil fields but settled in California in 1921 and engaged in geological and petroleum engineering work with several independent companies. In 1940 he became chairman of the Alberta Petroleum Board but was recalled in June, 1941, to be Director of Production in the Office of Petroleum Coordinator at the beginning of the national emergency. After the U. S. entered the war he became Assistant Deputy Administrator of PAW. He resigned in September, 1943, to become Director of Information of API.

John S. Cooke, assistant to the director of the Department of Information, has been with API since he answered an advertisement on May 10, 1920. At that time he had completed 14 months of service with the American Expeditionary Forces in Siberia. He was hired as assistant to the Director of the Division of Transportation. When that division was dissolved he became secretary to Boyd and served in that capacity for more than 20 years.

Familiarly known as "Doc" Cooke to thousands of oil men from coast to coast, he has operated as secretary to the Board of Councillors, which nominates the candidates for directors. His close touch with the affiliated associations and his intimate knowledge of the history of the petroleum industry fit him for the position he holds.

Boyd and Cooke are the only mem-

bers of the staff who have attended every annual meeting of the API.

Work of the Institute is carried on by the three divisions, production, refining, and marketing; and five departments, accident prevention, engineering, statistics, public relations, and American Petroleum Industries Committee.

Production Division

The production division of API maintains headquarters in Dallas, the geographical center of more than 75 percent of the nation's oil production.

The operations of the division are conducted in accordance with accepted policies governing the Institute's work, which are accomplished by collective and cooperative action. Activities now cover the formulation and publication of specifications and standards on oil field materials, codes of recommended practices on care and use of materials, and other functional field or laboratory operations, and codes on measuring, sampling and testing crude oil, natural gas and natural gasoline.

Other activities of the production division include the preparation of instructional material for vocational training of oil field workers, the conduct of open forums at national, district and chapter meetings for public presentation and discussion of drilling and producing problems, and the preparation of progress reports on principles and factors involved in conservation and allocation of petroleum.

Probably the most noted achievement of the production division is its work on standardization, care and maintenance of oil field equipment. Several years ago few pieces of oil field equipment "matched" or fitted together; now, virtually all oil field material is measured by API standards, which are a guarantee of specifications and grades throughout the oil world. Standardization of equipment is credited with saving the oil industry about $15 million annually.

During an average year the production division sponsors approximately 75 district and local meetings. An average of 150 papers and discussions are presented at these meetings, which are attended by 10,000 to 15,000 oil men.

The division also conducts research work on such problems as protection of pipe lines, the function of water in the production of oil, and the use of meters for measuring crude oil and its products.

The work of the division is under the direction of C. A. Young, secretary, API, division of production, with J. E. Stillwell as assistant.

The API marketing division, which during World War II concentrated largely upon automotive lubrication, fire prevention, marketing equipment, and railroad transportation, is handled by D. V. Stroop, secretary.

The transportation committee considers and recommends action on virtually every national problem, other than freight rates, affecting the efficient and economical use of tank cars.

The lubrication committee has sponsored an educational program to inform automobile owners of its recommended practice for complete chassis lubrication, including crankcase oil change in passenger motor cars.

Other standing marketing committees are at the service of petroleum marketers on matters relating to laws and regulations.

Refining Division

The refining division of API cooperates extensively with other organizations in solving problems of the refiner. The division works with the Society of Automotive Engineers, Inc., on the Coordinating Research Council, Inc., to study problems of mutual interest to the automotive, aeronautical and petroleum industries.

A joint committee of API and the American Society of Mechanical Engineers was organized in 1931 with five members from each organization to prepare a suitable code for the design, construction, inspection, and repair of unfired pressure vessels for petroleum liquids and gases. The code covers the many types of pressure vessels used in petroleum production and refining and is widely used throughout the oil industry.

In order to carry on educational activities within the industry, with government and with the general public, to bring about better understanding of tax and legislative problems relating to the industry and its customers, the API board of directors created the American Petroleum Industries Committee in 1932. This committee has been headed by Baird H. Markham since its inception.

Among the objectives of the committee's educational program are strengthening administrative provisions of gasoline tax laws to prevent evasion of taxes and their unsound conditions, reasonable taxation of motor fuel by the states, use of automotive tax revenues exclusively for highway improvements, and limitation to the states of taxation of petroleum products.

Many thousands of oil men, representing every branch of the industry, particularly marketing, are members of the various state and local committees.

Statistical Department

The API's department of statistics functions to supply the industry with regular, dependable statistical information. Fred Van Covern has been director of this department since 1924.

Weekly, monthly and annual statistics pertaining to production, consumption, transportation, and refining of crude petroleum are made available by the department.

The Institute's department of information is headed by Robert E. Allen and makes available to the public through newspapers and trade journals general and technical information relating to the oil industry.

For more than 20 years, oil company accounting officers have been working through the API committee on uniform methods of oil accounting, to establish uniform accounting systems. The API "Manual of Uniform Accounting for the Oil Industry" has come into general use.

Through the efforts of the API department on accident prevention, accident frequency among the oil company's workers has dropped 58 percent and fatalities have declined 50 percent.

API Silver Jubilee Program

Tuesday, November 13, 1945
2:30 PM
Board of Directors

Board of Directors. (Private Dining Room 2)

Wednesday, November 14, 1945
GROUP SESSION
9:30 AM
DIVISION OF PRODUCTION

Well Spacing and Production Allocation: (South Ball Room)
(Sponsored by the Special Study Committee on Allocation of Production and Well Spacing)
Presiding: Edgar Kraus, The Atlantic Refining Company, Dallas; and H. H. Kaveler, Phillips Petroleum Company, Bartlesville, Oklahoma.

Optimum Well Spacing:
W. H. Barlow, The Ohio Oil Company, Findlay, Ohio; and W. B. Berwald, The Ohio Oil Company, Tulsa.

A Factual Analysis of the Effect of Well Spacing on Oil Recovery.
R. C. Craze and S. E. Buckley, Humble Oil & Refining Company, Houston.

A Re-examination of Production Data on Mexia-Powell Fault-Line Fields.

The Relation Between Well Spacing and Recovery.
W. V. Vietti and O. F. Thornton, The Texas Company, Houston; J. J. Mullane, The Carter Oil Company, Tulsa; and A. F. van Everdingen, Shell Oil Company, Inc., Houston.

Wednesday, November 14, 1945
GROUP SESSION
9:30 AM
DIVISION OF REFINING

Research and Technology: (Grand Ball Room)
Presiding: Harry Levin, The Texas Company, Beacon, New York.

No Peace for Fractionators.
P. J. Harrington, B. L. Bragg III, and C. O. Rhys, Jr., Standard Oil Development Company, Elizabeth, New Jersey.

The Story of the Technical Oil Mission.
A. E. Miller, Sinclair Refining Company, New York.

Investigation of European Synthetic-Oil Industry.
W. J. Schroeder, Bureau of Mines, Department of the Interior, Washington, D. C.

The AAF and Petroleum Research.
Colonel Donald L. Putt, Deputy Commanding General, Intelligence (G-2), Air Technical Service Command, Wright Field, Ohio.

Coordinating Research Council in the Days to Come.
K. G. Mackenzie, The Texas Company, New York.

10:00 AM

BOARD OF DIRECTORS

Board of Directors: (Private Dining Room 2)

10:00 AM

BOARD OF COUNCILLORS

Meeting of Board of Councillors: (North Ball Room)
To nominate candidates for election as members of the Board of Directors.

12:15 PM

BOARD OF DIRECTORS

Luncheon: (North Assembly Room)

GENERAL SESSION

2:30 PM

General Session: (Grand Ball Room)

Report of Board of Councillors and Election of Directors.

President's Address:
William R. Boyd, Jr., President, American Petroleum Institute; Chairman, Petroleum Industry War Council.

Address:
Ralph K. Davies, Deputy Petroleum Administrator for War, Washington, D. C.

The Relationship Between Rail and Air Transportation.
C. R. Smith, Chairman of the Board, American Airlines, Inc., New York.

Address:
Dr. Virgil Jordan, President, National Industrial Conference Board, New York.

Wednesday, November 14, 1945

GENERAL SESSION

8:00 PM

General Session: (Grand Ball Room)

Address:
Harold L. Ickes, Secretary of the Interior; Petroleum Administrator for War, Washington, D. C.

Address:
Lieutenant-General James H. Doolittle, U. S. Army Air Corps, Washington, D. C.

Address:
Lieutenant-General Raymond S. McLain, U. S. Army, Washington, D. C.

Thursday, November 15, 1945

GROUP SESSION

9:30 AM

DIVISION OF PRODUCTION

Technology of Water Injection: (South Ball Room)
(Sponsored by the Topical Committee on Production Technology).
Presiding: J. E. Sherborne, Union Oil Company of California, Santa Fe Springs, California; and Paul D. Torrey, Houston.

Injection of Water into Underground Reservoirs in Michigan.
W. E. Schoeneck, The Ohio Oil Company, Grand Rapids, Michigan.

Technology of Water Injection in the Allegany Field, New York.
George W. Holbrook and Wilbur H. Young, Bradley Producing Corporation, Wellsville, New York.

The Behavior of Water-Input Wells.
Parke A. Dickey, Quaker State Oil Corporation, Bradford, Pennsylvania; and Kurt H. Andresen, South Penn Oil Company, Bradford, Pennsylvania.

Pressure Maintenance by Water Injection, Midway Field, Arkansas
W. L. Horner, Barnsdall Oil Company, Tulsa.

Interactions Between Interstitial and Injected Water.
A. J. W. Headlee, Johns Hopkins University, Silver Springs, Maryland.

Report of Division's Nominating Committee.
Carl E. Reistle, Jr., Humble Oil & Refining Company, Houston, Chairman.

Election of Twenty Members of the General Committee of the Division of Production.

Thursday, November 15, 1945

GROUP SESSION

9:30 AM

DIVISION OF REFINING

Catalytic Cracking: (Grand Ball Room)
Presiding: H. W. Field, The Atlantic Refining Company, Philadelphia.

Liquid Charge Technique in TCC Cracking.
T. P. Simpson, Socony-Vacuum Oil Company, Inc., New York; and H. G. Shimp, Houdry Process Corporation of Pennsylvania, Marcus Hook, Pennsylvania.

Peacetime Fuel Oils from War Equipment.
J. R. Bates, J. B. Hill, and Arthur E. Pew, Jr., Sun Oil Company, Philadelphia.

High-Capacity Operation of Fluid-Cracking Units.
E. V. Murphree, E. J. Gohr, H. Z. Martin, H. J. Ogorzaly, and C. W. Tyson, Standard Oil Development Company, Elizabeth, New Jersey.

Report of Division's Nominating Committee.
T. G. Delbridge, The Atlantic Refining Company, Philadelphia, Chairman.

Election of Twenty Members of the General Committee of the Division of Refining.

GROUP SESSION

9:30 AM

DIVISION OF MARKETING

Marketing Session: (North Ball Room)
Presiding: E. V. Weber, Eureka Oil Company, Cincinnati, Ohio.

Gasoline Quality.

Fuel-Oil Availability.
S. B. Eckert, Sun Oil Company, Philadelphia; E. W. Isom, Sinclair Refining Company, New York; F. G. Shoemaker, Detroit Diesel-Engine Division, General Motors Corporation, Detroit; and W. A. Matheson, President, Oil-Heat Institute of America, Inc., New York, and Vice President of Williams Oils-O-Matic Division of Eureka Vacuum Cleaner Company, Bloomington, Illinois.

World Supplies of Gasoline, Kerosine, and Burning Oils.
Steward P. Coleman, Standard Oil Company (New Jersey), New York.

Report of Division's Nominating Committee.
W. C. Burns, Richfield Oil Corporation of New York, New York, Chairman.

Election of Twenty Members of the General Committee of the Division of Marketing.

10:00 AM

BOARD OF DIRECTORS

Board of Directors: (Private Dining Room 2)
Note: The newly-elected Executive Committee will meet immediately following this session of Board of Directors.

Thursday, November 15, 1945

GENERAL SESSION

2:30 PM

General Session: (Grand Ball Room)

Address:
Vice Admiral Ben Moreell, Chief of the Bureau of Yards and Docks and Officer in Charge of Navy Petroleum Plant Office, Washington, D. C.—with Captain B. W. Gillespie, Executive Officer, Navy Petroleum Plant Office, Washington, D. C., and Commander J. G. King, Navy Petroleum Plant Officer, Chicago.
Speaker to be announced.

Petroleum vs. Plutonium.
Dr. Clark Goodman, Massachusetts Institute of Technology, Cambridge.

History Looks at Oil.
Dr. Paul H. Giddens, Curator of the Drake Well Memorial Park and Museum, Titusville, Pennsylvania.

Research, Industry and Government.
Bruce K. Brown, Vice President of Standard Oil Company (Indiana), Chicago.

REGISTRATION AND INFORMATION DESK

The Institute's registration and information desk will be open Monday morning, November 12, to Thursday afternoon, November 15, in the foyer of the Grand Ball Room on the second floor of the Stevens Hotel, to register those attending the Twenty-fifth Annual Meeting. All attending the meeting are requested to register as soon as possible after arrival. There is no registration fee.

Pemex Has Active Drilling p

Plans call for completion of approximately 15 wildcats before end of current year

Exploration Drilling Program for 1946

Indicated here in color is Petroleos Mexicanos' exploration drilling program for 1946. Proposed drilling sites are shown in relation to present productive fields.

ng Program

Mexico Looks Ahead

Part 4

A report on current and projected geological and geophysical work prepared for The OIL WEEKLY by the exploration department of Petroleos Mexicanos, under supervision of Manuel Rodriguez Aguilar, head of that department.

THE exploration program of Petroleos Mexicanos calls for much more work than was done during the early years after the expropriation. During the current year Petroleos Mexicanos is operating 28 geological and geophysical parties and it plans to drill up to the end of the present year about 15 wildcats. It is intended to increase the exploration activities up to 36 geological and geophysical parties during 1946 and maintain from then on that amount of exploration. The Mexican proven oil provinces are shown on the accompanying map, and they are divided as follows:

1. Tampico embayment, which covers Southern Tamaulipas and Northern Veracruz.

2. Isthmus-Tabasco which covers the southeastern part of Veracruz and part of the State of Tabasco and northern Chiapas.

3. Northern Mexico, which covers northern Tamaulipas and Nuevo Leon and is a part of the so-called Rio Grande Embayment.

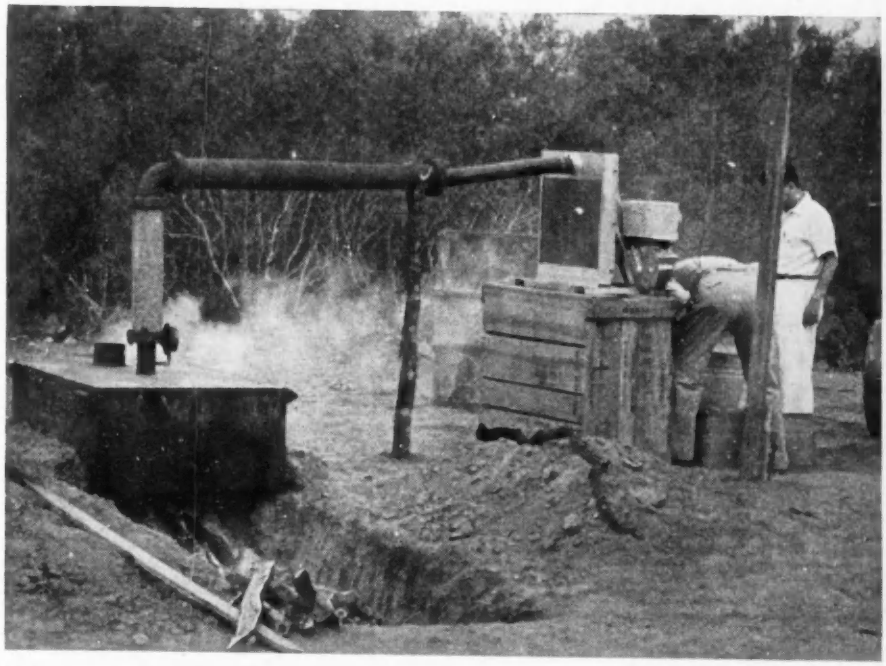
Tampico Most Important

Until now the most important oil provinces of Mexico belong to the Tampico embayment where the large oil fields of Panuco, Golden Lane and Poza Rica are located. This area has produced about 85 percent of the Mexican oil, and it also contains about the same percentage of the total present proven reserves of the country. The Isthmus-Tabasco area is the next in importance as far as oil produced and proven reserves. In this area the following producing oil fields are located:

Tonala.
El Burro.
El Plan.
Cuichapa.
Francita.
Nuevo Teapa.

All this production comes from the southeast part of Veracruz and until now only very small, non-commercial production has been found in Tabasco. However, it is expected to develop new oil fields in the latter state, and the wildcatting program for this year and 1946 calls for the testing of different structures in the state of Tabasco.

In northern Mexico no oil production



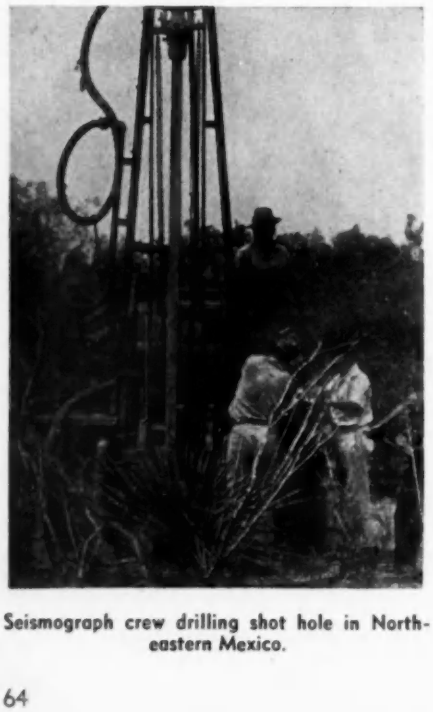
Distilling water in Rio Grande Valley of Mexico for use of men engaged in geophysical search for oil.

Electrical party operating in the Ebano area of the State of Vera Cruz, Mexico.

Areas of Oil Possibilities in Mexico

About one third of Mexico's area has possibilities for petroleum production, although best prospects are in three presently productive districts adjacent to the Gulf of Mexico.

has been found, but due to the similarity of geological conditions of this area and South Texas it is expected to find soon new oil fields there. In this area three gas fields are located, two of which (La Presa and Rancherias) contribute to the gas supply of the city of Monterrey while the third (Mision), discovered in 1945, is not yet in the stage of exploitation.



Seismograph crew drilling shot hole in Northeastern Mexico.

Petroleos Mexicanos is operating 17 geological parties which are working as follows:

Northeast Mexico: three parties.

Tampico-Tuxpan embayment: five parties.

Isthmus-Tabasco: five parties.

Lower California: two parties.

Other areas: two parties.

Most of the geological work which is being carried on by Petroleos Mexicanos has been done in the known petroliferous provinces of Northeast Mexico, Tampico, and Isthmus-Tabasco. In northern Mexico detailed geological surveys of the area covered by Eocene outcrops are being carried out, and reconnaissance work is being done in Coahuila and Chihuahua where production of Jurasic or Permian is expected.

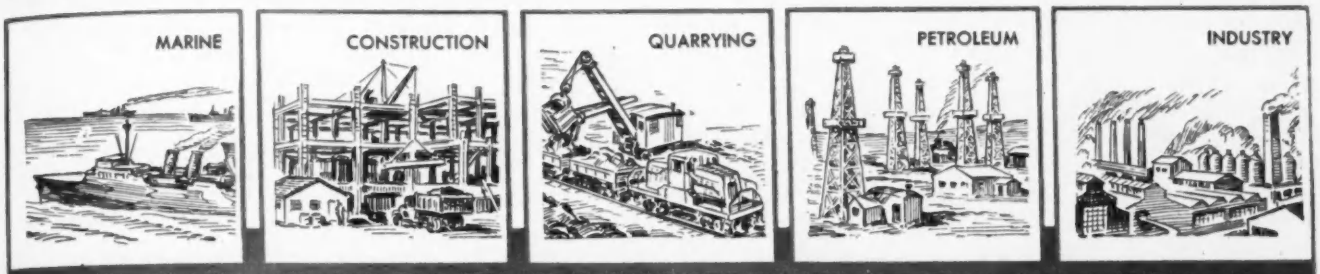
In the Tampico-Tuxpan embayment Petroleos Mexicanos has been making geological surveys of all the areas over which only reconnaisance geological work has been done before, and some detailed work has been done in those

More Data on Mexico Scheduled

This article on petroleum prospecting in Mexico supplements extensive material published in THE OIL WEEKLY of November 5. It embodies information discussed in less detail in that issue, and reveals that an impressive program of exploration is under way, while plans call for even more prospecting henceforth.

In this series, two additional articles on Mexico are scheduled for early issues. The next will give detailed information on the present producing fields of the country and also include more data on wildcat drilling. The other will present data on the existing, building, and proposed pipe line systems in Mexico.

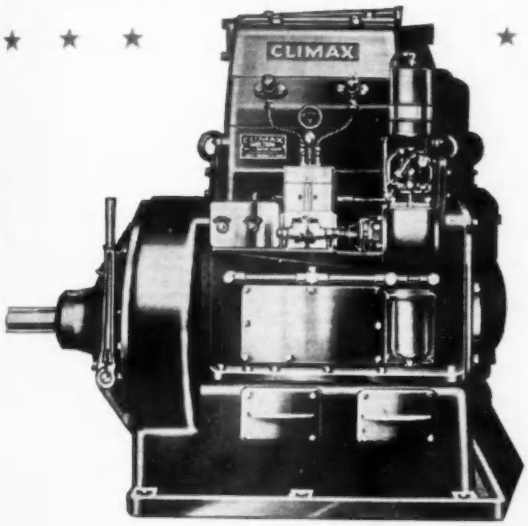
IT'S DONE WITH DIESELS



...CLIMAX Diesels!

Operating on CHEAP, LOW GRADE, Standard Fuel Oil

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★



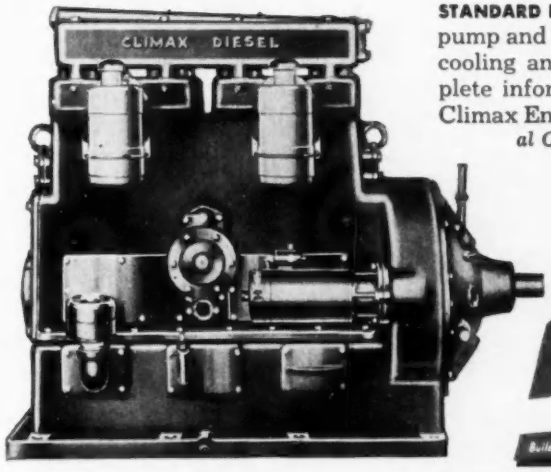
IN A SCORE OF INDUSTRIES—and in the marine, quarrying, petroleum and construction fields—these "little giants of Diesel power" are found driving fans and blowers, pumps, compressors, electric generators, conveyers and hoists, small locomotives, etc., powering boats and supplying auxiliary power on large vessels. Because—using less than ½ pint of low cost fuel per horsepower hour—these smooth-running Climax Diesels are incomparably *the most economical source* of dependable power available to small power users.

Built with one-piece construction of cylinder block and crankcase, they are strong and rugged, 4-stroke-cycle, solid injection, compression ignition engines that start at the touch of a button, by local or remote control.

CLIMAX MODEL D-148 Diesel Engine. Two cylinder, full Diesel with maximum rating of 22 h.p. at 1200 r.p.m. Also available with 15 kva generator.

★

CLIMAX MODEL D-297 Diesel Engine. Four cylinder, full Diesel, maximum rating 44 h.p. at 1200 r.p.m. Also available with speed reduction units, or with 30 kva generator.



STANDARD EQUIPMENT includes American Bosch fuel pump and injection nozzles, positive lubrication and cooling and electric starting equipment. For complete information and specification bulletins, write Climax Engineering Company, Clinton, Iowa. *Regional Offices: Chicago, Ft. Worth, Tulsa, Los Angeles.*

climax DIESEL
Builder of Climax BLUE STREAK ENGINES and GENERATING SETS
CLIMAX ENGINEERING COMPANY

MID-CONTINENT DISTRIBUTOR
The Continental Supply Co., General Offices, Dallas

CALIFORNIA DISTRIBUTOR
Climax Engines & Parts Co., 2050 Santa Fe, Los Angeles

Fording a wide stream near the new producing area at Soledad, west of the Golden Lane fields. Although built high off the ground, the oil field trucks would be drowned out in trying to cross under their own power. The tractor successfully tows them across. Cars and small trucks cannot be so pulled except when the river is low.

areas where wildcatting is contemplated. The best prospective areas for the development of new oil fields are in this province, and intensive wildcatting will be carried on there in 1946.

Virgin Fields

Petroleos Mexicanos is making geological surveys in areas where no previous work had been done, such as the central part of Lower California and Oaxaca, Guerrero, and Tepic. The work which has been done in these areas is broad reconnaissance, in order to gain knowledge of the extent of the embayments and the main structural and stratigraphical conditions of their formations. In those cases where the extent of the embayment and the stratigraphical conditions will warrant further studies, they will be carried on with more detail, employing either geological or geophysical methods.

In those areas where the geological work is not detailed enough to warrant the expense of wildcatting or where the information obtained by geological methods gives no clue to the underground conditions, Petroleos Mexicanos is carrying on geophysical work. The parties which are operating at the present time are four gravity parties operated by Pemex; six seismograph parties of which two are operated by Pemex and four are rented from G.S.I. and Westby Geophysical Company; and one electrical party, working in the Panuco-Ebano district, operated by Pemex.

The gravity work carried on by Petroleos Mexicanos is covering the following areas:

1. Northeast Mexico. The area east of the outcrop of the Oligocene, where the surface work does not show the structural conditions underground. The gravity work is intended to give regional information in that area and has been in progress for several years.

2. Tampico-Tuxpan embayment. Gravity work has helped in the past in the discovery of some oil fields, and a general survey has been in progress since 1941.

3. Isthmus-Tabasco. In the area where the swamps make impossible other type of reconnaissance work. This work is being extended to eastern Tabasco.

4. Lower California.

During 1946 the gravity work will be extended to new areas (Veracruz embayment and Yucatan), where no commercial production has been found but where big embayments are known to exist.

Some geological work will be done in 1946 in these new areas.

Refraction seismograph crew at work in tropical eastern Vera Cruz, Isthmus region.

Seismological Parties

The seismological parties are distributed as follows:

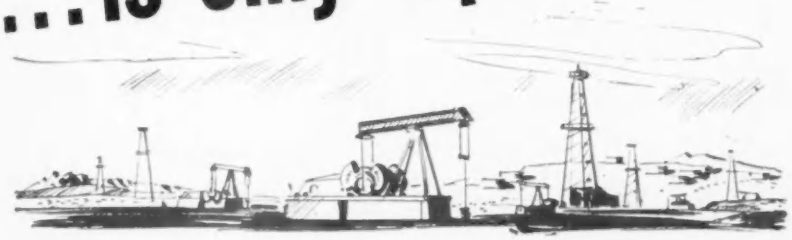
Northeastern Mexico, two.
Tampico embayment, two.
Veracruz-Tabasco, two.

During 1946, two new parties are programmed to work in Mexico, and Pemex contemplates hiring them from American firms.

Most of the work being done by Pemex is reflection; however, one refraction party has operated for about three years in the Isthmus area, where oil accumulation is associated with salt domes. During that period four new salt domes have been located by this party, which has also done some work intended to define the salt edges in some areas where shallow domes were known to exist.

50 Million Strokes...

...is only a part of a lifetime



SADDLING A WELL HEAD IS OUR JOB

50 million working strokes covers only a portion of the life-span of thousands of Emsco Unit Pumpers now in operation. Long life is the specification to which every feature is designed.

EMSCO UNIT PUMPERS are manufactured for light, medium and heavy pumping loads and with a range of pumping speeds and strokes to meet any pumping conditions. Emsco Unit Pumpers give dependable operation after years of service.

EMSCO DERRICK & EQUIPMENT COMPANY

HOUSTON, TEXAS LOS ANGELES, CALIF. DALLAS, TEXAS

EMSCO

REG U.S. PAT. OFF.

Field Installation of Lubricators

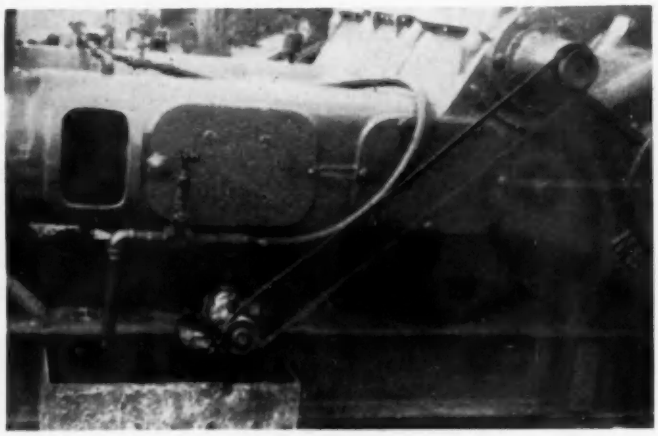
By HARRY A. HESS, Staff Writer

Installing circulating pump on base of mud pump. V-belt sheave at right has been turned down and threaded to screw into 1¼-inch hole in high-speed shaft.

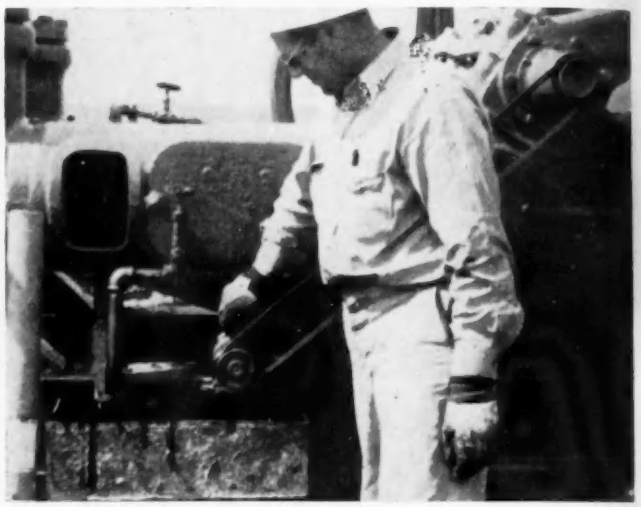
MANY drilling contractors are finding that the life of packing and piston rods on the fluid end of slush pumps can be extended greatly by using a thin oil instead of water for lubrication. In some instances the use of an oil of about equal parts of crank case oil and Diesel oil has more than doubled the life of these parts.

Oil lubricating systems have been used for several years, with contractors devising their own arrangements for bringing the lubricant to the piston rods. Usually a pump is connected to the high speed shaft of the mud pump by means of V-belts and circulates the oil from a sump placed beneath the rods. Accompanying photographs show a few of the arrangements encountered in the field.

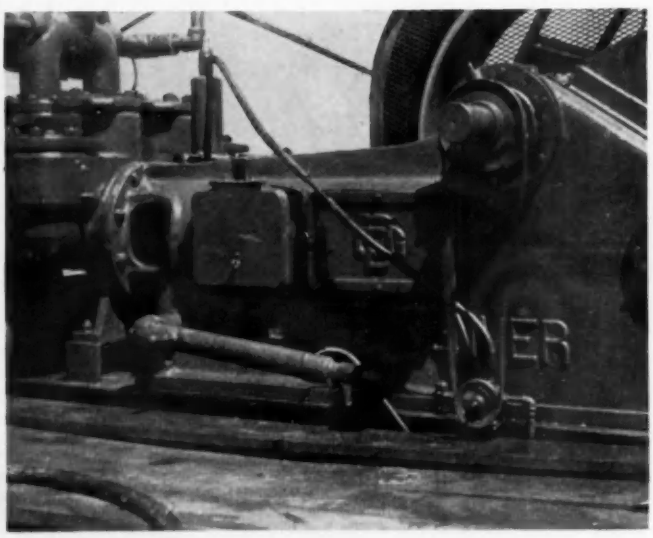
One of the main difficulties in scoring of piston rods and wearing out of packing is that the packing is drawn down tighter than necessary. This usually occurs when hole is being made to set surface pipe when water has not been connected to the orthodox type of piston rod lubricator. By using oil, it was found that more care on the part of the crew was taken to see that the rods were lubricated and adjusted.



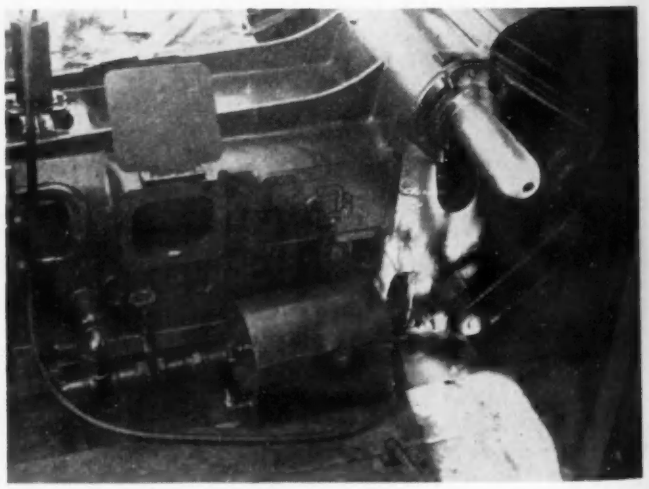
View of same pump showing discharge line to each rod. Part of the lubricant is returned to the sump to prevent excess pressure on the circulating pump.



The tool pusher adjusting the completed installation. Two-inch return line from beneath connecting rod shows on the left. A new set of piston rods, ready to be installed, leans against pump.



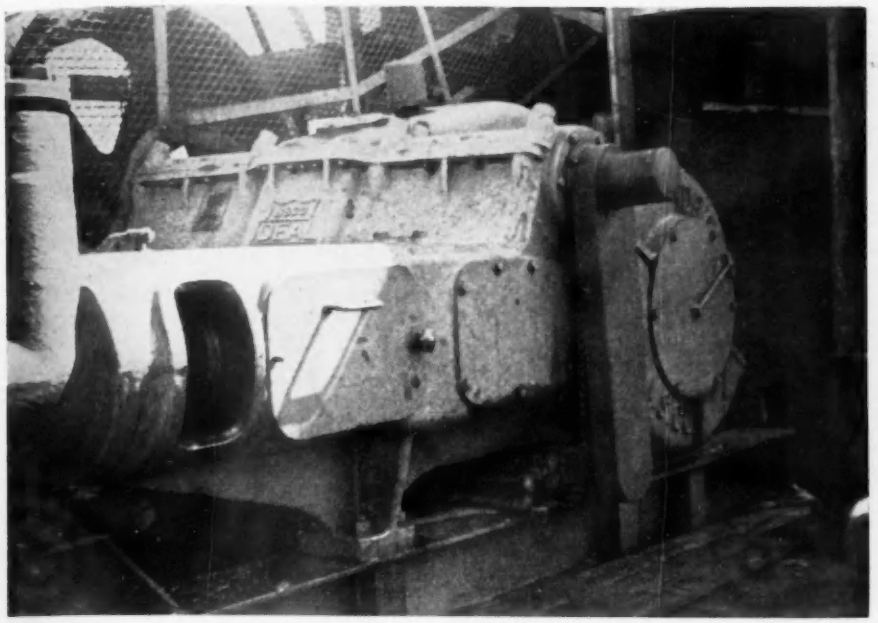
Hook-up with smaller pump and using three-inch pipe nipple for sump. Two-inch bull plug on end allows bleeding off of mud and water.



Chain-driven pump from slow-speed shaft. Metal box sump with three-eighths drain.

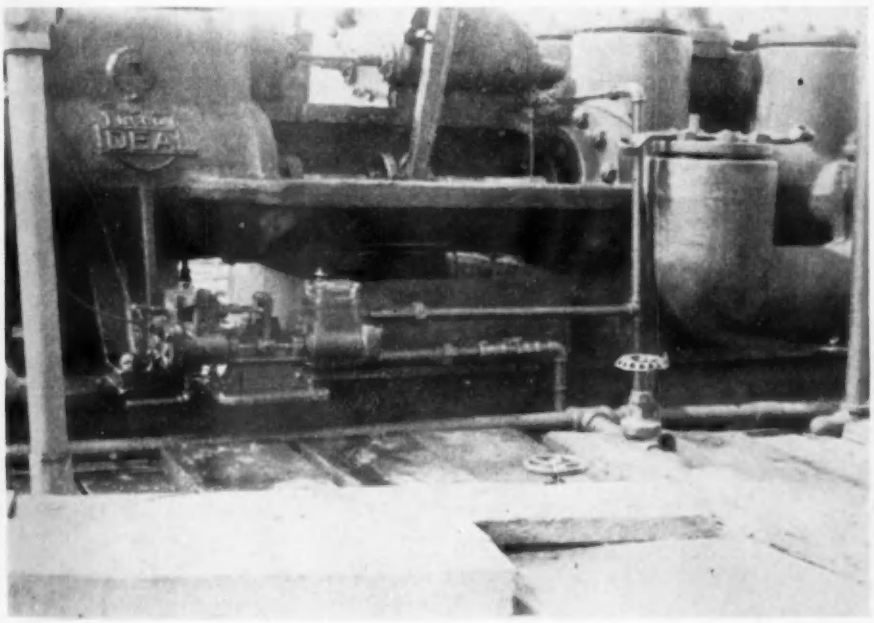
# of Slush Pump Piston Rod

Life of packing and piston rods can be extended greatly by use of a thin oil



Chain-driven pump from high-speed shaft, having chain guard as safety feature. All connections are solid piping. Sump is under piston rods.

Lubrication pump eliminated by means of gravity type feed, using 50-gallon drum for storage. Oil is collected in five-gallon buckets and returned to storage vessel.



Steam-driven lubricating system for use on steam-powered mud pumps. A connection is made with copper tubing to power the pump which circulates oil from a sump beneath the mud pump rods.

—Picture courtesy of Allen & Morris, contractors, San Antonio.

Another innovation is the use of a sight feed lubricator to feed the oil drop by drop. This gives better control of the flow and oil is not wasted.

Drilling Equipment Needs

By DOUGLAS RAGLAND
Humble Oil & Refining Company

Fundamental Improvements needed to allow drilling depths to increase profitably

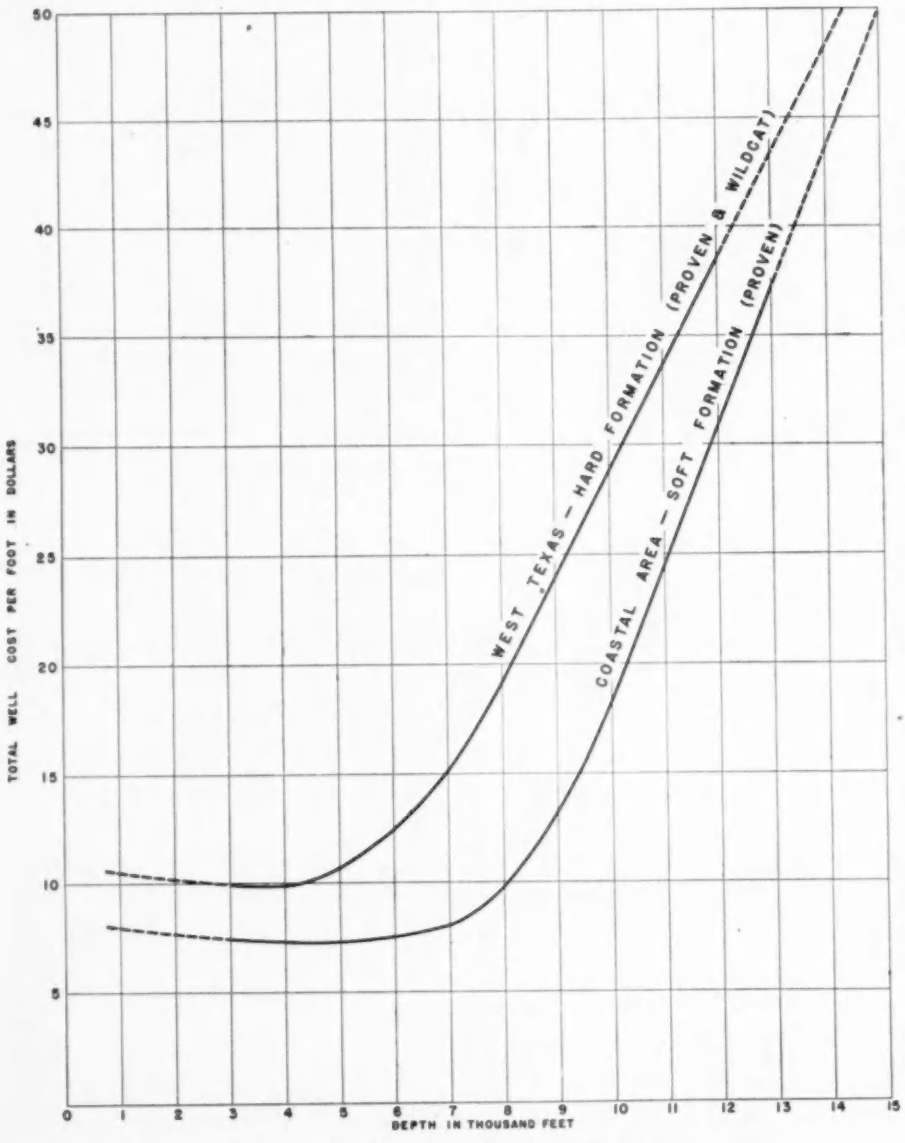


Figure 1. Cost per Foot vs Depth

Rotary Drilled Wells (1944 and 1945) In typical areas of Texas, Louisiana and New Mexico

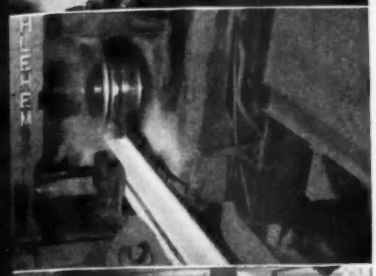
IT IS realized that the drilling industry is generally well informed concerning a great many drilling equipment needs. In addition to your individual experiences, several excellent trade journal articles on this subject have appeared recently. It is also realized that manufacturers have attained a high state of perfection from the standpoints of design and specification in building modern drilling machinery. They are hardly a step behind current demands of the customer. In spite of this perfection, however, the rapid increase of drilling costs as depths progress from 10 to 12 to 15 thousand feet and deeper have led many of us to wonder whether our depth records in the future will be limited by advancements in material and design or by increases in dollars per foot. It is no secret that drilling cost curves approach the vertical as the 9000-foot mark is passed. Certainly some rather *fundamental* improvements are needed if we are to attain a more reasonable slope that will allow depths to increase at a profit. It is this need for fundamental improvements that we are concerned with here. It is sincerely hoped that some of the outstanding research talent developed during recent years will be available to solve many of the problems we suggest. Hiroshima proved that nothing is impossible, and just that type of thinking may be required.

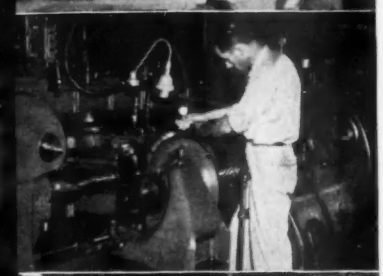
Trend of Drilling Costs

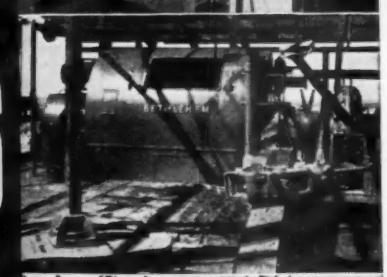
Figure 1 shows the average total well cost per foot for typical wells drilled to various depths in the Texas, Louisiana, and New Mexico areas during the past two years. The upper curve is based on five wildcat and 23 proven area wells drilled in the hard formation sections of West Texas and New Mexico. The lower curve shows the average total cost of 160 proven area wells drilled in relatively soft formations of the Texas and Louisiana coasts. As a matter of interest, the maximum deviation from the curves ranges from plus or minus 20 percent for 8000-foot wells to plus or minus as much as 50 percent for wells deeper than 10,000 feet. Wildcats cost some 20 percent more than proven area wells. The deviations for those portions of the curve shown as projections, of course, cannot be predicted.

You will note that the flat, or low-cost, portion of the hard formation curve extends to about 6000 feet, whereas this portion of the soft formation curve extends to about 8000 feet. In thinking of drilling equipment needs, we are certainly little concerned with these portions of the curves. We are

Presented at the fifth annual meeting of the American Association of Oil Well Drilling Contractors, Oklahoma City, October 2, 1945.







FROM ORE MINE TO FINISHED UNIT . . .

Bethlehem all the way

Here's the picture in brief:

Bethlehem drilling and pumping equipment is made by an integrated, closely-knit organization that mines its own ore . . . makes its own steel . . . does its own rolling, forging, and casting . . . designs, machines, assembles, and services its own products.

Each step in the making of Bethlehem machinery is supervised by specialists who have devoted many years to the oil business. Behind them are the entire facilities of Bethlehem Steel Company. That's why every Bethlehem unit is soundly engineered, soundly manufactured: why it's durable, efficient, and long-lasting.

That's why, too, you can place complete reliance in a recommendation by Bethlehem—and in the widespread Bethlehem service organization, whose men are available at convenient points throughout the oil fields.

Bethlehem Supply Offices or Stores: **Arkansas**—Magnolia; **Colorado**—Craig; **Illinois**—Grayville, Salem; **Kansas**—Chase, Great Bend, Pratt, Russell, *Wichita; **Louisiana**—Harvey, Houma, Lake Charles, New Iberia, Shreveport; **Mississippi**—Laurel; **New Mexico**—Artesia, Hobbs; **Oklahoma**—Oklahoma City, *Ponca City, Seminole, Tulsa, Wewoka; **Texas**—Alice, *Amarillo, *Beaumont, Borger, Bowie, Corpus Christi, *Corsicana, *Dallas, *Fort Worth, Graham, Houston, Kamay, Kermit, Kilgore, La Ward, McAllen, Odessa, Pampa, *San Antonio, Sundown, Wichita Falls, Winnsboro. (**Office only.*)

BETHLEHEM SUPPLY COMPANY
Subsidiary of Bethlehem Steel Corporation

BETHLEHEM STEEL

MOVING & RIGGING UP – 6.66 %
REPAIRING RIG – 6.11 %
CASING & CEMENTING – 7.02 %
COMPLETE – 8.91 %
MISCELLANEOUS – 15.92 %
INCLUDES CONDITIONING MUD, SLOPE TESTS, FISHING, SIDE TRACKING, FORMATION LOGGING, DRILL-STEM TESTING, PLUGGING ETC.
CORING – 8.63 %
DRILLING – 46.75 %
INCLUDES ROUND TRIPS TO CHANGE BITS, CIRCULATING TO REMOVE CUTTINGS, REAMING, AND GREASING THE RIG.
AVERAGE TOTAL TIME - 123 DAYS
AVERAGE TOTAL DEPTH - 10,520 FEET

Figure 2. Typical Drilling Time Analysis Data

70 wells—9000 feet and deeper in Texas, Louisiana and Florida, drilling during 1944 and 1945

very muchly concerned, though, with the portions beyond 6000 and 8000 feet where both curves turn rapidly upward and assume somewhat similar slopes to the limits of the projected data. Here is cause for real alarm. For example, the curve for hard formation drilling shows that a 7000-foot well costs in the neighborhood of $15 per foot; for wells deeper than 7000 feet, the cost increases so rapidly that if the depth of the well is merely doubled, the cost per foot is increased by over 300 percent. A worse situation holds true for wells drilled in soft formations. The curve shows that an 8000-foot well will cost some $10 per foot and that a well drilled to 15,000 feet, not quite twice as deep, will cost about $50 per foot, or five times as much. The economic significance to the producer of these cost-depth relationships is apparent and their trend is certainly nothing new. They are given here to emphasize that something more than minor improvements, and certainly some very fundamental improvements, are required if the reasonable cost portions of the curves are to be extended.

Cost Factors

Where should we look for fundamental improvements? One way to approach this question is to examine the factors which make up the total cost of deep wells and consider them in accordance with their relative importance. Figure 2 is designed to show just such a relationship of drilling cost factors. Inasmuch as the cost of deep wells is virtually directly proportional to the time required for drilling, the chart is plotted in terms of percent of total rig time for all of the various drilling operations required for an average well. This chart is plotted on the basis of the average drilling time analysis for some 70 typical wells, including 35 producers and 35 dry holes, drilled 9000 feet and deeper in the Texas, Louisiana, and Florida areas during 1944 and 1945. The average total rig time for these 70 wells is 123 days, and they were drilled to an average total depth of 10,520 feet. As would be expected, the drilling operation alone consumes a greater percentage of the time than any of the other items, but it is discouraging to note that this drilling phases actually consumes less than half of the total rig time on the well. Items other than drilling are largely responsible for the high total-per-foot costs, and many opportunities for fundamental improvement are to be found among these auxiliary operations. Stated differently, if the cost of the auxiliary operations remained the same, the cost of drilling operation itself could be reduced by 50 percent and yet produce less than a 25 percent reduction in total well cost.

Now, let us examine individually the various drilling operations shown on this chart and determine if equipment improvements of a fundamental nature can be suggested for each.

The operation of moving and setting up the rig consumes 6.66 percent of the total rig time, or about eight out of 123 days, for our typical deep well. Developments in transportation equipment and rig unitization during the past ten years have decreased rig-moving and setting-up times to nearly irreducible minimums, assuming proper transportation equipment is available. There are no suggestions for real fundamental improvements here, but two minor cost items are worth mention: First, rig-moving and setting-up costs vary closely with the weight of the rig, and this factor should be considered in the design of improved equipment, particularly for the heavier rigs. The cost of rig equipment, including drill pipe, averages about 21 cents per pound and the average total cost to move it and set it up is estimated at about 1 cent per pound, depending upon local conditions which can vary widely. There is little justification for high-priced, light-weight materials, but moving costs are great enough that appreciable increases in weight must be accomplished by definite increases in efficiency. Second, an improvement not reflected by the chart is the need for low-cost, portable road materials, particularly for wildcat locations. Lumber for board roads is scarce, expensive and of generally poor quality, with little promise of change for the better in the near future. Some of the matting materials developed for portable airport service may have application here.

Drilling the Hole

In the majority of deeper wells, the drilling operation itself, of course, consumes a large portion of the total time on the well. For example, as shown on the chart, the drilling operation consumes 46.75 percent of the total time on our typical well, or 57½ days out of 123. Actually less than 2/3 of this so-called drilling time is spent productively, that is, rotating on bottom and making hole, and the remainder is devoted to such nonproductive operations as round trips to change bits, reaming the hole, greasing the rig, and circulating to remove cutings. It is natural then that many of the fundamental improvements we suggest have to do with equipment for conducting the nonproductive as well as the productive phases of the actual drilling operation. A logical division of suggestions concerning equipment for drilling is (1) needs for improvement in surface equipment, and (2) needs for improvement in subsurface equipment, and we shall discuss them in that order.

The tremendous increase in weights of surface drilling equipment that is required as horsepower rises to meet the demands of deeper drilling coupled with the fact that the duration of repetitive operations, such as going in the hole, is greatly increased with depth, leads us to one logical suggestion—automatic machinery. The substitution of automatic or semiautomatic power-operated machinery for many of our present more or less manual operations is probably a vital necessity if extremely deep drilling

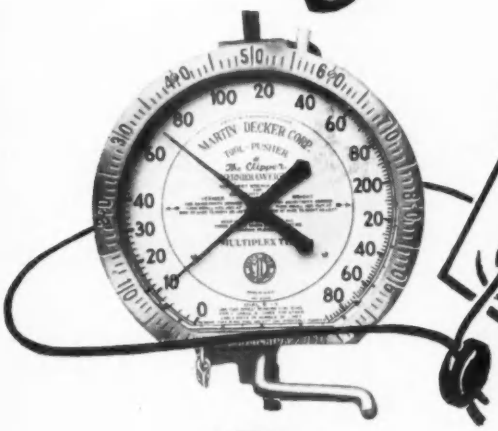
SEALED

FOR GREATER ACCURACY and SERVICE

There's no pumping up . . . no adjusting . . . no leaks. The fluid system is factory loaded and permanently sealed—fluid remains in the unit even during transportation and storage. Installation is fast and fool proof—accuracy is guaranteed.

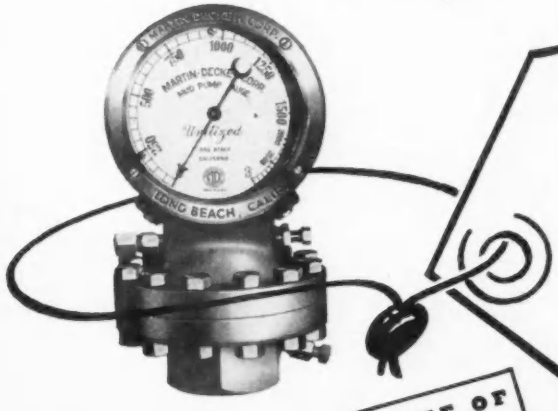
The "Sealtite" Drilling Control

The master recording instrument for every job where you want complete control of all drilling factors. Indicates and records weight, mud pressure, torque and shows rotary table speed. Illuminated for easy night reading. Has capacity to handle 20,000-foot wells. Gauge readings are smooth, sensitive, always accurate.



The Clipper "Sealtite" Weight Indicator

A portable weight indicator for ordinary drilling or production work. "Sealtite" construction combines factory calibrations and elimination of the possibility of leaks with maximum portability. Has vernier gauge for extremely sensitive weight control when fishing, milling, etc.



The Unitized Mud Pump Gauge

Accuracy, sensitivity and smooth, easy readings make this the ideal portable gauge for measuring slush pump pressures. Mechanism runs in an oil bath, eliminating rust or corrosion. Large numerals stand out clearly from 30 feet or more, and readings can be made by simply noting position of gauge hand. Vernier retard movement covers both low and high pressure ranges. "Unitized" is available in one, three or five thousand pound capacities.

HOME OF THE WEIGHT INDICATOR

MARTIN DECKER CORP.

LONG BEACH, CALIFORNIA

SAN JOAQUIN VALLEY: A. F. McQUISTON, BAKERSFIELD, CALIFORNIA

MID CONTINENT DISTRIBUTOR: REED ROLLER BIT COMPANY, HOUSTON, TEXAS

is to be carried out successfully on a production basis in the manner of our shallower drilling today. The development and utilization of such automatic machinery will not only greatly prolong the useful working life of the drilling personnel, but will allow the crews to study the performance of their equipment rather than perform with it. They will concern themselves with attaining maximum efficient results from the drilling machine as a whole in place of giving physical assistance to the various parts. The actual development of some automatic drilling machinery is now in progress. It is reasonable to expect that entirely new types of drilling machines, capable of such operations as a round trip to change bits without the help of a "working" crew, may become available for heavy duty drilling service in the near future. A dream? Yes, but so was the unitized drawworks only some ten or 12 years ago.

Another improvement which we consider a fundamental need in drilling is equipment for removing economically 100 percent of the sand from drilling mud. At present, the sand content of drilling fluid cannot be reduced economically to below 3 or 5 percent. These figures, of course, are not alarmingly high, but when it is considered that with 5 percent sand content, a circulating system which contains 800 barrels of mud also contains 40 barrels of sand, there is certainly cause for concern. The removal of this 40 barrels of damaging abrasive would virtually eliminate the costly replacement of slush pump parts which are sand cut with discouraging speed. Furthermore, the elimination of sand in drilling fluid would make possible the application of high speed, highly efficient, and highly flexible centrifugal pumps for slush pump service. Such pumps would have immediate application on all types of rigs, and on power rigs in particular.

And speaking of pumps, numerous fundamental improvements are needed here. Steam pumps, while having excellent features for drilling service such as low first cost, light weight, and excellent performance characteristics, are costly to operate in terms of fuel. Power pumps, while economical in fuel consumption, are generally costly, heavy in weight, and poor in performance characteristics for drilling service. Fundamental improvements are immediately suggested for both classes of equipment. The fuel economy of steam pumps might be considerably improved by the further development of compound steam ends; this development was started a number of years ago by at least one manufacturer but was dropped because of mechanical difficulties in the design. The basic performance defect of the power pump, its ability to deliver only a limited pressure regardless of fluid output, that is, constant torque operation, could be eliminated by the adaptation of a variable stroke design similar to that recently developed for power plant boiler feed pump service. Such a power pump design would produce a constant horsepower performance curve even better adapted to drilling service than that of the steam slush pump. It is rumored that a least one large manufacturer is working on a power pump design along these lines.

Numerous other needs in surface drilling equipment, such as more efficient power plants, higher strength materials for wire lines, improved brakes for draw works, more accurate depth measuring equipment, and means for eliminating or reducing the 1 hour in 24 that is normally spent in merely greasing the rig, are well known and will not be discussed here.

Turning to subsurface drilling equipment, it appears, naturally, that improved bits and drill pipe are the only fundamental changes that can produce real increases in efficiency, particularly for hard formation drilling. We have no worthwhile suggestions to offer concerning strictly hard formation drilling, but are eagerly awaiting trial results of an interesting percussion type rock bit now ready for use in the West Texas area.

We do have something of a fundamental nature to suggest as an equipment need for improving medium-hard and soft formation drilling. Here, control of hole size and not bit service, or rate of penetration, is our chief cause for concern. Using the best of the more common drilling fluids available, we are unable to control hole enlargement to a satisfactory degree. In many instances, the hole size gradually increases after the hole is made from the eight or nine inches drilled to as much as 20 or 30 inches. This, in a large measure, is responsible for the excessive hydraulic horsepower that is required to maintain satisfactory rates of circulation in deeper holes. This effect also is the direct cause of many cases of stuck drill pipe where the heaviest circulating equipment cannot maintain adequate rates of circulation through the washed-out portions of the hole. Drilling fluids that will prevent this hole enlargement are now available, but at prices from $7 per barrel upward, which make it prohibitive for average drilling.

A fundamentally new and low-cost drilling fluid that will eliminate hole enlargement would tremendously decrease the cost of drilling deep wells in soft and medium-hard formation areas. Such a mud would make possible the design of a circulating system to meet a given and predetermined set of conditions, probably with considerable reduction in pump size based on present standards. It would eleminate the need for long periods of circulation to clean the hole of cuttings and make possible the application of studies concerning the relationship of hydraulics to drilling bit efficiency.

Coring, Evaluating Formations, and Miscellaneous

Aside from completing a producer, the only other purpose in drilling a well is to discover formations that are capable of producing oil or gas in paying quantities. This finding operation is an expensive and uncertain task. The chart shows that 8.63 percent of total well time is consumed in the coring operation alone. In addition to coring time, a considerable portion of the time shown as "Miscellaneous" is devoted to formation logging and drill-stem testing, which serve further to evaluate possible producing formations. In all, an estimated 13 days out of the 123-day total rig time is used for coring and evaluating formations on a typical deep well. This figure can be even higher for some wildcats and for development wells in multiple-sand fields.

Much highly developed equipment is now available for formation evaluation, including core barrels and core analysis equipment, the various electrical logging devices, mud logging apparatus, and formation testers. The cost of using any single one of these devices would be considered little enough if a 100-percent recovery of conclusive information could be obtained. The discouraging thing is that none of these devices tells the whole story about every type of formation and in many instances all of them used together will not effect a complete evaluation. For example, the core barrel not only misses cores occasionally but methods of core analysis are subject to error. Electrical logging devices produce a large quantity of accurate information concerning formation changes, but they do not answer the question "What will I produce if I set casing and complete a well?"

Mud logging equipment, although quite promising, fails to tell the whole story concerning producing ability. Drill-stem formation testers, while the most costly to use, are probably the most revealing of the devices mentioned, but here again the result is not 100 percent conclusive. Many formations require acidization or other special treatment before they will produce and formation testers cannot perform this service. An inexpensive and thoroughly reliable equipment for formation evaluation would bring the cost of wildcats and outpost wells in line with that of proven erea wells and would greatly reduce the cost of development wells in multiple-sand fields.

Numerous items other than evaluating formations make up the 15.92 percent of total rig time indicated on the chart for miscellaneous operations. These include mixing mud, running slope tests, fishing and sidetracking, waiting on orders or material, and plugging to abandon. While certainly subject to minor improvements, these items suggest nothing of a fundamental nature.

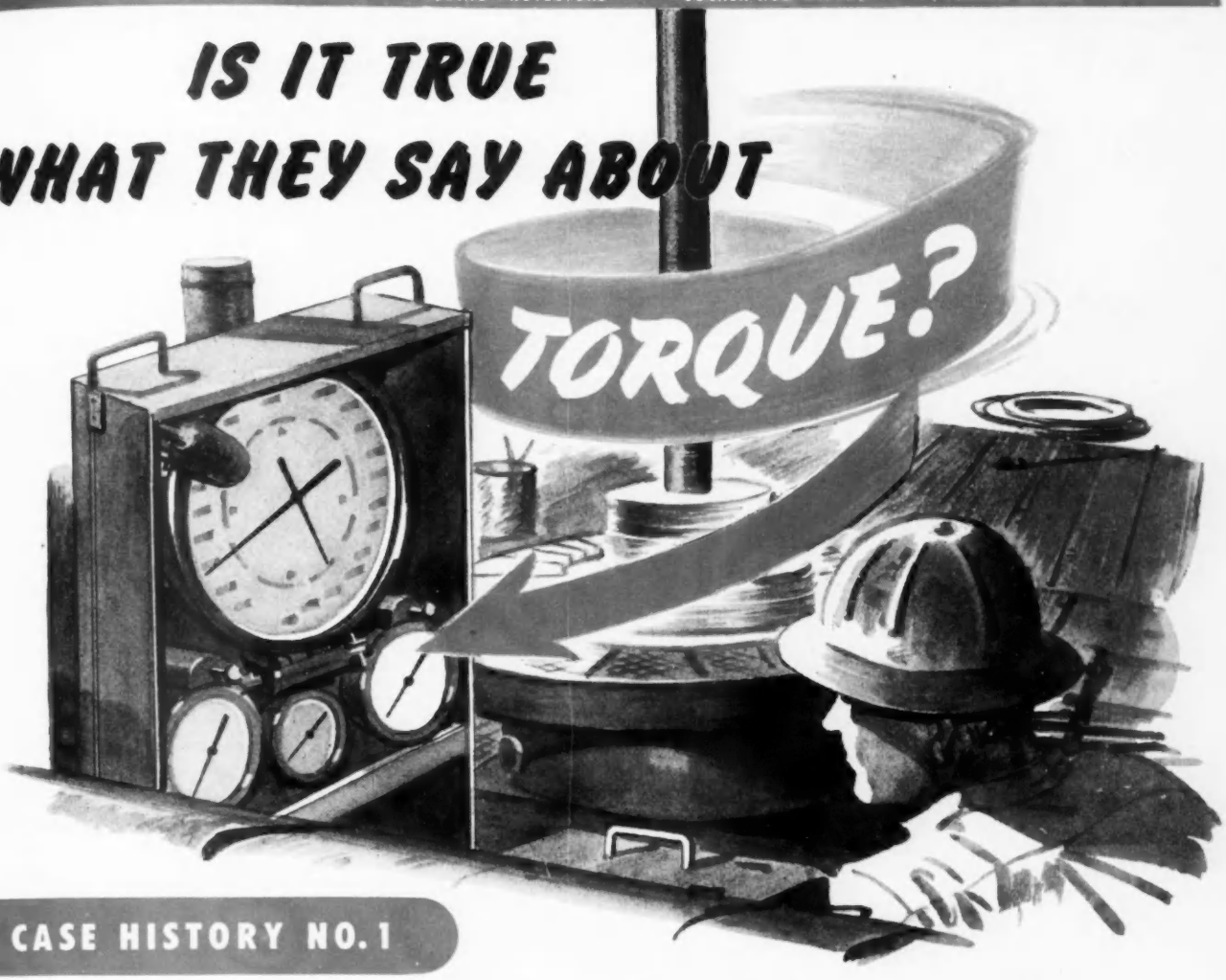
Well Completion, Casing and Cementing

The final product of the drilling rig as far as the customer is concerned is not merely a deep hole in the ground, but a completed well ready to produce. In many fields where drilling costs are relatively low, completion difficulties make the total well costs quite high. For the typical well shown on the chart, 11 days out of 123, or 8.91 percent, are consumed in completion operations.

Some fundamental improvements in cementing materials would produce a substantial decrease in well completion time. Casing, liner, and formation cementing have always been difficult tasks, and these difficulties have led the industry to seek relief by demanding cements with higher and higher tensile strengths. It is now questionable whether these demands have been justified. For example, the chief deficiency may not be low strength cement, but rather the inability of the cement to set up and form an impermeable seal when mixed with drilling fluid. In other words, contamination and not low strength has been one cause of trouble. Furthermore, high strength is a distinct disadvantage when completions are attempted by perforating cemented casing. It follows then that a fundamental equipment need of the industry is a cement of reasonable tensile strength, low resistance to perforation, and the ability to set up and form an impermeable seal between the casing and the formation when thoroughly contaminated with drilling fluid.

CASING PROTECTORS • STABILIZERS • PIPE WIPERS • WIRE LINE GUIDES • WIRE LINE WIPERS • KELLY WIPERS
KELLY SUB PROTECTORS • MUD GUNS • MUD GUN NOZZLES • SWIVEL BAIL BUMPERS • DEAD LINE STABILIZERS
TRAVELING BLOCK BUMPERS • TUBING PROTECTORS • SUCKER ROD WIPERS • TUBING WIPERS

IS IT TRUE WHAT THEY SAY ABOUT TORQUE?



CASE HISTORY NO. 1

One of the largest oil companies was having hard drilling in their well near Houston. The torque, at 150 R.P.M., in 7,000 feet of 9⅝" casing, with 4½" drill pipe, was 200*, approaching the "twist-off point"; therefore, the weight on the bit could not be controlled. Their pusher suggested casing protectors. After installation of 230 Patterson-Ballagh Protectors the torque at 150 R.P.M. had been reduced to 75. This was well within the safety limit. They were now able to control the weight on the bit, and drill faster and better.

To the *drilling superintendent:* this is proof that Patterson-Ballagh Protectors reduce torque, meaning less fishing jobs, more speed of drilling and less tool joint wear.

To the *well owner,* this means that casing wear has been reduced, meaning longer life for the well and faster drilling time, which lowers the overall cost.

To be absolutely sure that metal to metal contact does not take place, insist on a Patterson-Ballagh Casing Protector, at every tool joint. Protectors are now made of PBX synthetic rubber, lipped to streamline the drill pipe and give added wear and protection.

CALL OR DROP A CARD TO YOUR NEAREST PATTERSON-BALLAGH OFFICE.

**Unitized table drive with 7¼ x 7 vertical steam engine, 350 lbs. steam pressure available.*

"Best Bet Yet"

PATTERSON-BALLAGH
LOS ANGELES 1 • HOUSTON 10 • NEW YORK 6

PATTERSON-BALLAGH
DRILL PIPE AND CASING
PROTECTORS
Now Made of PBX Synthetic Rubber—Oil and Weather Resistant

This cement should also be made acid proof in order that simpler and more successful completions can be effected in lime formations. Many of our most expensive completion jobs are carried out in lime-producing fields where the acid which is necessary to effect oil production destroys the cement job that is placed to protect that oil production against gas and water channeling.

Many other improvements, such as higher tensile strength and heat resistant packer sealing elements, longer life swab sealing materials, and casing perforating devices with increased ranges of penetration, would contribute to reductions in completion cost, but these are considered minor in comparison with the need for an improved oilwell cement.

Casing and cementing time takes some 8½ days, or 7.02 percent, of the 123-day total rig time for a typical deep well. This in itself is not a particularly large item and offers but little chance for improvement. However, when it is realized that about 2/3 of this casing and cementing time is not actually used for running casing and pumping cement, but constitutes time spent while waiting for cement to harden, we have something worth thinking about. The specifications for an improved oil well cement should certainly include a lower-than-present setting time, retaining, of course, the required period of pumpability. This improvement alone would effect up to a 5 percent saving in total well time for average deep drilling conditions.

Rig Maintenance

With present rigs the 5 percent saving in total well time that could be realized by the elimination of cement waiting time would not be a real saving. This period is actually spent in repairing and reconditioning the rig. In addition to this 5 percent, another 6 percent of the total well time, as shown on the chart, is devoted to rig maintenance. Eleven percent shut-down time definitely calls for fundamental improvement. It may not be reasonable to expect that a drilling rig can be made to equal the performance of the ordinary household refrigerator, which often runs eight to ten years without attention, but there is room for fundamental improvement in a record of one day shut down in nine. Design for far greater overload conditions is certainly a basic suggestion here.

Conclusion

In conclusion, the critical examination of the operation of present drilling equipment suggests many possibilities for fundamental improvements that shouud result in greatly decreased deep drilling costs. Indeed, it is plain that such fundamental improvements must be made if costs *are* to be reduced greatly. Only research can provide these advancements. It is believed that the industry today is ready to put research men on the job in the increased numbers that will be required.

Acknowledgment

Appreciation is extended to the many members of the Production Department of Humble Oil & Refining Company who assisted in obtaining data, and to the management of the Humble Oil & Refining Company for permission to prepare and present this paper.

Radiotelephone Aids Pipe Line Maintenance

USE of radio communication in pipe line operation and maintenance is being introduced into the industry and represents the most up-to-date method of handling communication problems. Two companies now have installations which are proving entirely satisfactory, and each company is planning further application of the systems to other properties.

Because field personnel must exercise constant vigilance for failure and breakdown in the operation of a pipe line, Union Gas Systems of Independence, Kansas, has installed a 250-watt transmitter-receiver at its headquarters and 14 30-watt mobile units in maintenance cars and trucks. Twenty more mobile installations are planned.

A 250-foot tower supports the main station antenna, and signals from it can be read with ease more than 60 air line miles away. This is the most distant point of the pipe line, and thus the entire system is always in direct communication with the main office.

A unique feature is that the main station is controlled from four different consoles, parallel-connected, at one time. One remote console is located at the telephone switchboard for immediate action by the crews. Another remote console is in the office of the president of the firm, for close contact with field personnel throughout the system by top management. The remaining two remote positions are respectively at the base of the tower for checking and monitoring work, and the gas measurement department where the superintendent having charge of that activity must keep contact with emergency conditions.

Standard equipment is used throughout assuring availability of immediate replacemeent parts. Contacts car-to-car have been carried on up to 20 miles over the Kansas plains; and all calls can be heard at the main station and from that point regardless where the mobile units are located within the areas the pipe line serves.

The Union Sulphur Company, of Sulphur, Louisiana, has installed a complete two-way radiotelephone communications system in connection with the operation of a 100-mile pipe line which it maintains for the Reconstruction Finance Corporation, Office of Defense Plants. The system was introduced because the area covered by the pipe line was almost all swamp, and one location was inaccessible except over water.

The installation consists of a 250-watt FM transmitter-receiver, operating at the main office, Sulphur Mines, Louisiana, with a 250-foot tower; 12 portable 50-watt FM units; and 5 mobile 50-watt FM sets for the cars and trucks. The system operates on 33.620 KC.

The mobile units are operated by personnel who have supervision of maintenance, gas dispatching, communications and drilling of oil. Used in place of regular telephone, since there is none, the radiotelephone has proved thoroughly dependable as the sole means of direct communication.

In some of the locations, the power is furnished by a public electric utility, and in other places, remote from power lines, gasoline-driven generators provide the primary power.

Permission was granted by FCC to start operation with a single radio operator who holds the required licenses. And the government agency also allowed the company to keep the necessary station logs by means of an automatic recorder device, which is located at the main station. It is believed that this is the first time that a recorded log has been maintained, eliminating troublesome filling out of forms, records, etc.

An average of over 200 calls have been placed over this system daily.

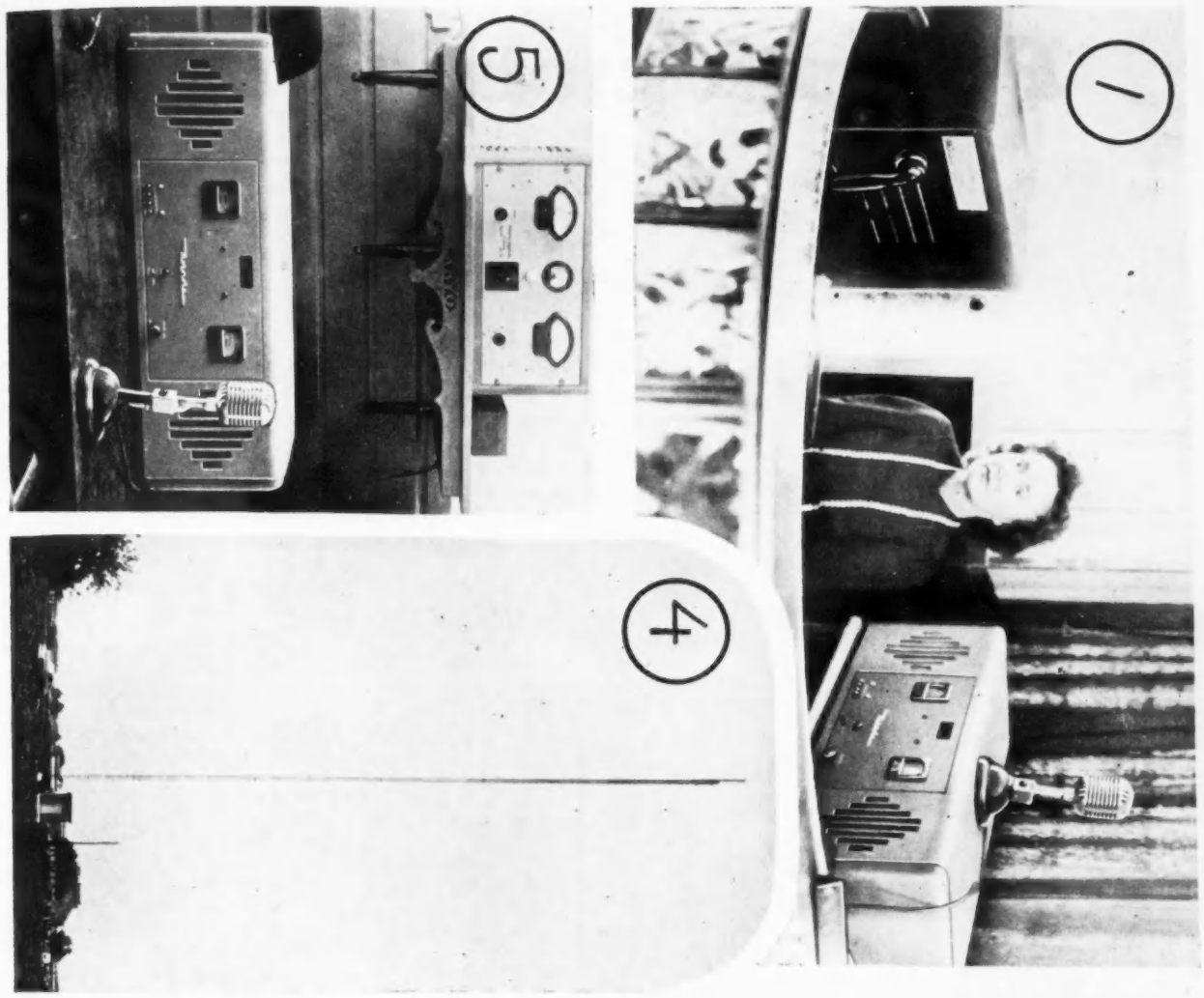
1. Remote control console installed at switchboard of the main office, where most of the trouble calls come in and can be retransmitted over the radiotelephone system to maintenance and repair crews.

2. George Chew, assistant to the president of Union Gas Systems, using the radiotelephone system connected through a small remote console in the background. In this manner top management keeps tabs on all the pipe line maintenance and repair operations.

3. Motorola radiotelephone remote console installed in gas measurement department of Union Gas Systems. It is imperative that this department be in immediate touch with conditions along the pipe line.

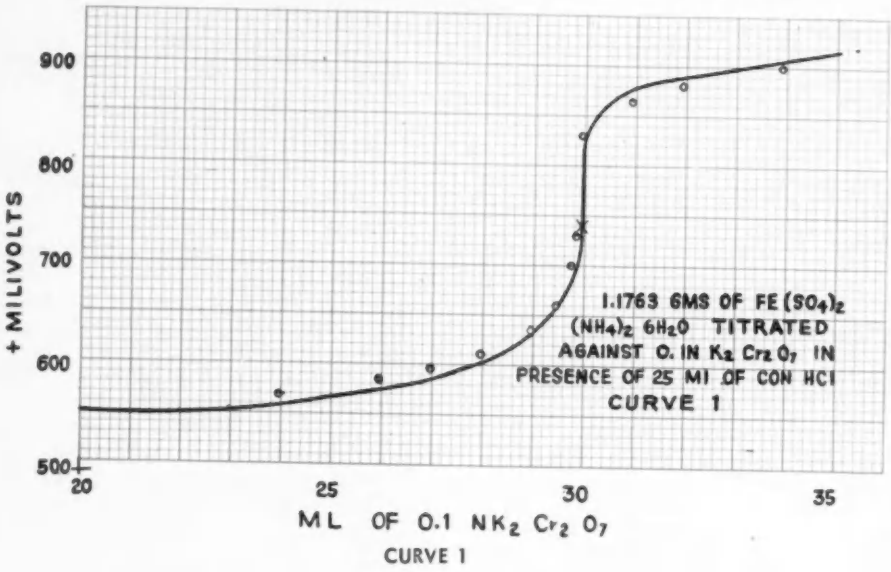
4. The main antenna of the Union Gas Systems radiotelephone, which rises some 250 feet above the Kansas plains. Contacts up to 60 miles are maintained with ease from this location. The four remote consoles are all parallel-connected and control the transmitter-receiver which the antenna serves.

5. Monitoring console at the base of the antenna tower in the transmitter room. Above it, on the ledge, is a frequency measuring device. Tests and checks for FCC rules conformation are made from this point.

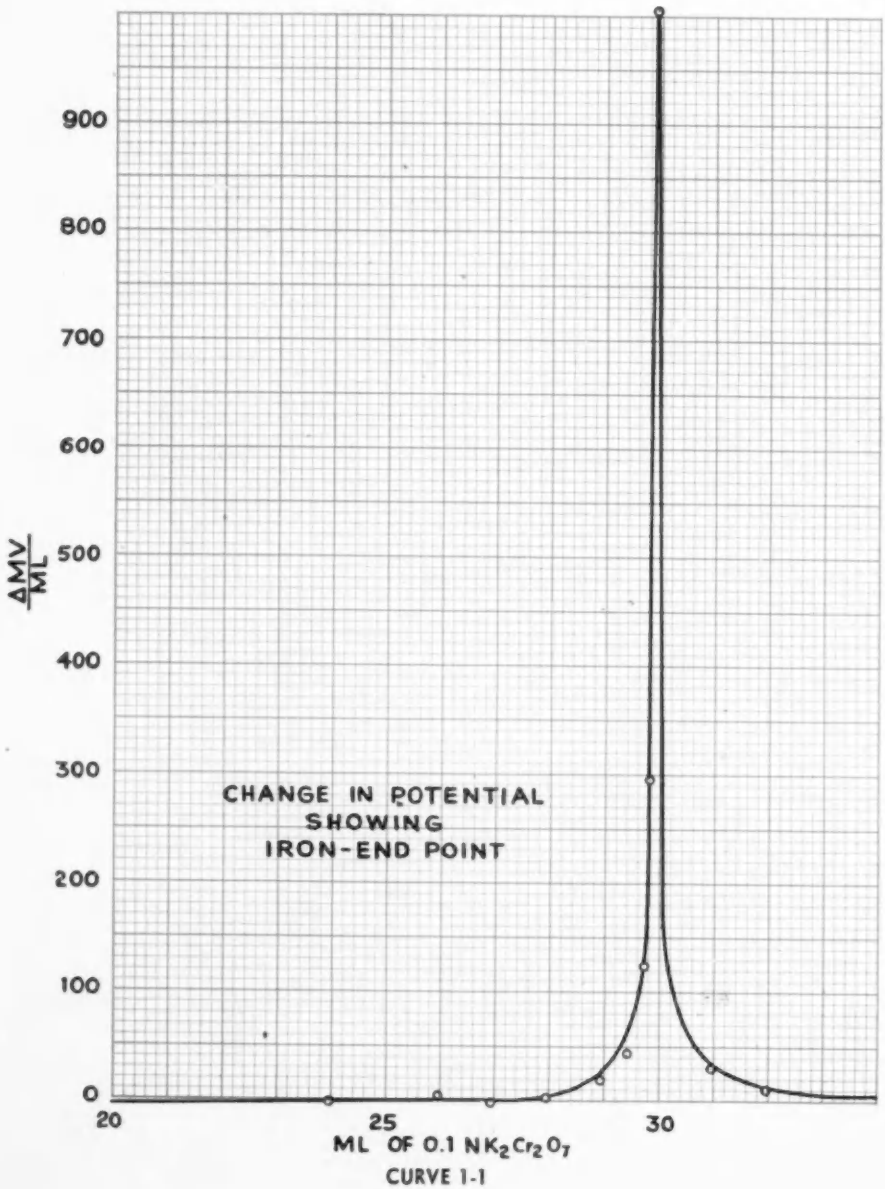


Potentiometric Titration of Iron

By W. F. OXFORD, JR.
Sun Oil Company, Beaumont, Texas



CURVE 1



CURVE 1-1

BY MEANS of a potentiometric titra- determination of iron present in waters produced by gas-condensate wells. This method was developed because of the necessity of correlating and determining the amount and rate of corrosion present in tubing flow strings.

Conventional methods of oxidation-reduction titrations are time consuming. Often the chemical stability and rate of indicator color development are not en- tion, a method is described for the rapid tirely satisfactory. The general advantages of potentiometric titrations as compared to conventional methods have been recognized in the literature. As the literature presents no specific potentials, the object of this paper is to record the exact oxidation-reduction potentials observed and acid concentrations necessary for the potentiometric titration of iron in the presence of stannous ions.

This titration procedure also presents a method by which the end point may be determined with an accuracy of at least a half of drop of reagent, without the construction of a graph. Due to the fact that a suitable electrode functions as a specific indicator even at high dilutions the potentiometric method yields highly precise and accurate results.

Theory: A process in which an electron transfer takes place is called an oxidation-reduction process. The intensity of the oxidizing or reducing action of a system is determined by its oxidation potential.

If we are dealing with a simple system,

$$\text{Oxidation} + Ne \rightleftharpoons \text{Reduction}$$

then the oxidation potential E is given by,

$$(1)\quad E = E_o + \frac{0.060}{N} \log \frac{(Ox)}{(Red)} \text{ (at 30° C.)}$$

E is a characteristic constant of each system and represents the oxidation-reduction potential in a system in which (Ox) = (Red). At this point, the second term in the equation (1) $\frac{0.060}{N} \log \frac{(Ox)}{(Red)}$ then becomes O, and $E = E_o$. E_o is called the normal potential of the system.

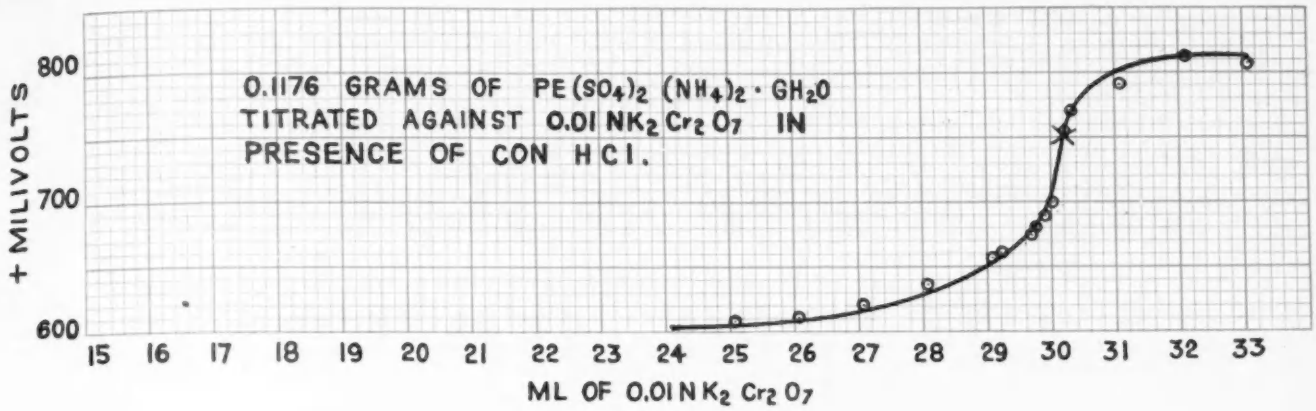
The oxidation-reduction potential of a mixture of Ferric and Ferrous ions, for example, is given by

$$Fe^{+++} + e \rightleftharpoons Fe^{++}$$

Then

$$(2)\quad E = E_o + 0.060 \log \frac{(Fe^{+++})}{(Fe^{++})}$$

The oxidation potential increases with an increase in the value of the ratio of (Fe^{+++}) to (Fe^{++}). If the ratio is 10,


0.1176 GRAMS OF PE(SO4)2 (NH4)2 · GH2O
TITRATED AGAINST 0.01 NK2 Cr2 O7 IN
PRESENCE OF CON H CI.
+ MILIVOLTS
800
700
600
15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33
ML OF 0.01 N K2 Cr2 O7

CURVE 2

$E = E_o + 0.060 \log 10 = E_o + 0.060$; if it is 1/10, $E = E_o + 0.060 \log 1/10 = E_o - 0.060$, etc.[1]

Underlying Theory

The theory underlying potentiometric titrations resembles that of ordinary titrations very closely, as there is a simple linear relation between the potential of an electrode and the ion exponent or the exponent of the ratio of oxidant to reductant in the oxidation-reduction system to be titrated.

From equation (2) and the explained data it may be inferred that for a unit change in ion activity, the electrode potential changes $\frac{0.060}{N}$ volt, if N is the number of electrons as shown in the electrode equation.

Therefore the change of potential of a suitable electrode during a titration is a direct indication of the varation of the ion exponent or oxidation-reduction exponent in the system. The relative change of the potential is exactly the same as that of the ion or oxidation-reduction exponent. Therefore a suitable electrode functions as a *specific indicator* for the ion or oxidation-reduction system that is to be titrated.

In a potentiometric titration we are not interested in the absolute value of the ion or oxidation-reduction exponents, but only in their changes. Consequently, values of the E.M.F. may be measured against some standard half cell during the titration and plotted against the volume of reagent in order to construct a titration curve.

The main purpose of potentiometric titration is to determine the location of the equivalence-point. This may be done in the following manner.

(a) From the measured change in potential just before and after the equivalence-point we may compute where the variation in rate of change of E.M.F./ml. has a maximum value $\frac{(\Delta \text{E.M.F.})}{\text{ml.}}$, or where the second derivative of this value is zero. This point coincides with the equivalence-point or lies in its immediate neghborhood.

(b) A large increase in potential at the equivalence-point indicates a corresponding change of the ion or oxidation-reduction exponent. Whenever a large jump in potential occurs, a suitable indicator in ordinary titrations will give a sharp color change.

If the potential of the electrode, measured against some standard half-cell, such as a calomel cell, is known at the equivalence-point, reagent is added to the solution until this "equivalence-potential" is reached. It should be remembered that this value of the equivalence-point potential depends more or less upon the ionic strength of the solution, since the activities of the components, and not their concentrations, determine the electrode potential. Therefore, it is not possible to give, for a special reaction, definite equivalence potential which will be constant under all conditions.[2]

Oxidation With Dichromate

Experimental:

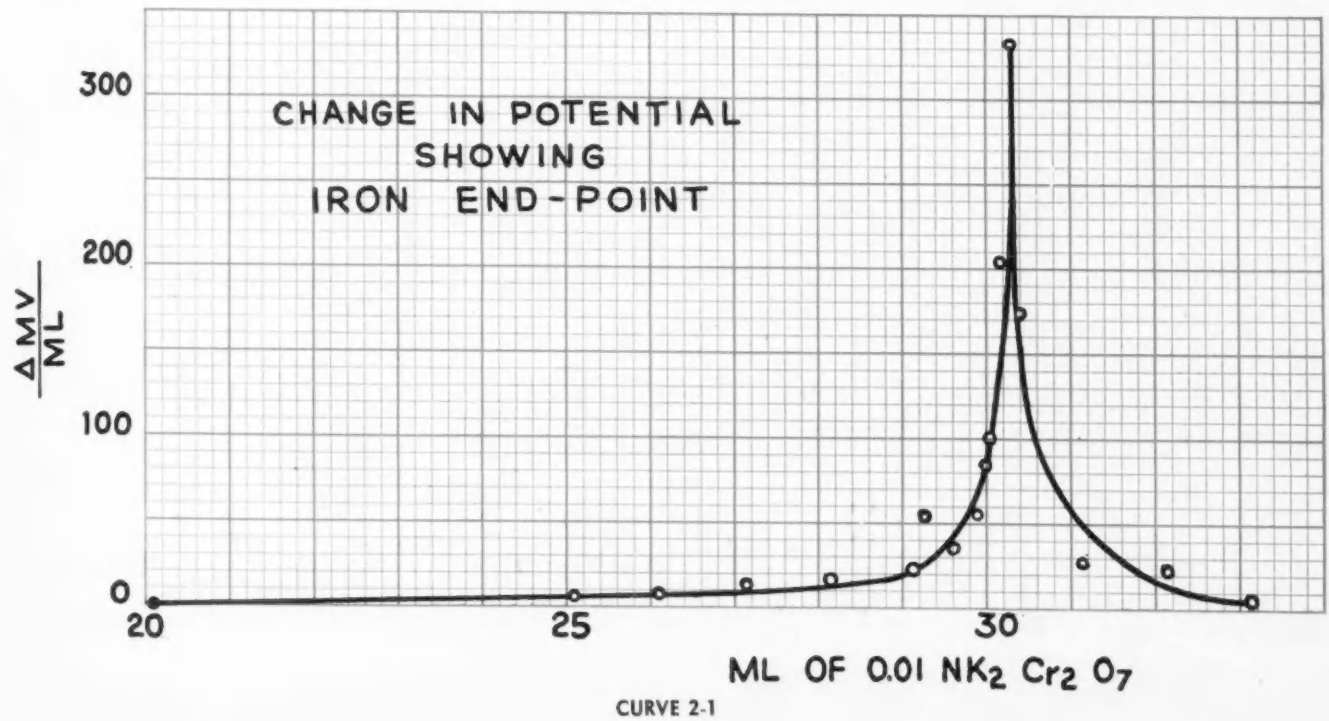
The oxidizing action of dichromate may be represented by the following equations:

(3) $Cr_2O_7 + 14H^+ + 6E \rightleftharpoons 2Cr^{+++} + 7H_2O$

and the potential relations by:

(4) $E = E_o + \frac{0.060}{6} \log \frac{(Cr_2O_7)\ (H^+)^{14}}{(Cr^{+++})^2}$

When the ratio of dichromate ions to Cr ions is kept constant, the electrode should change (14) $\frac{0.060}{6} = 0.135$ volts for each variation of 1 in pH. However, the behavior of the dichromate electrode differs from that which we should expect. It has been found that it makes



CURVE 2-1

A Byword in Wire Rope:

— FOR 6 BIG REASONS!

YOU LEARN A GREAT DEAL from individual service records about the efficient performance, the low average cost of Roebling "Blue Center" Steel Wire Rope. But records tell you only part of the story . . . of its toughness, its reserve strength, its basic dependability under *all* conditions of operation.

What makes "Blue Center" a rope you can choose with full confidence? The Roebling ***reputation,*** for one, and the superior Roebling-made ***steel*** in the wires.

There's the ***skill*** born of a century's experience that goes into the rope's fabrication, the modern, unsurpassed ***facilities*** used.

Add to the never-ending ***research*** that gives you longer rope life, the practical ***engineering*** that assures the best rope for your purpose.

Remember those facts when you order from America's first wire rope maker. They back up the performance you can expect from every reel of Roebling Wire Rope, preformed or non-preformed . . . and every correctly designed Roebling "Blueclad" fitting.

Now that increasing quantities of Roebling Wire Rope are available, we suggest you place your orders early. Call or write our nearest office . . . a Roebling engineer will help you select the correct rope and get full productive life from it.

JOHN A. ROEBLING'S SONS COMPANY
TRENTON 2, NEW JERSEY
Branches and Warehouses in Principal Cities

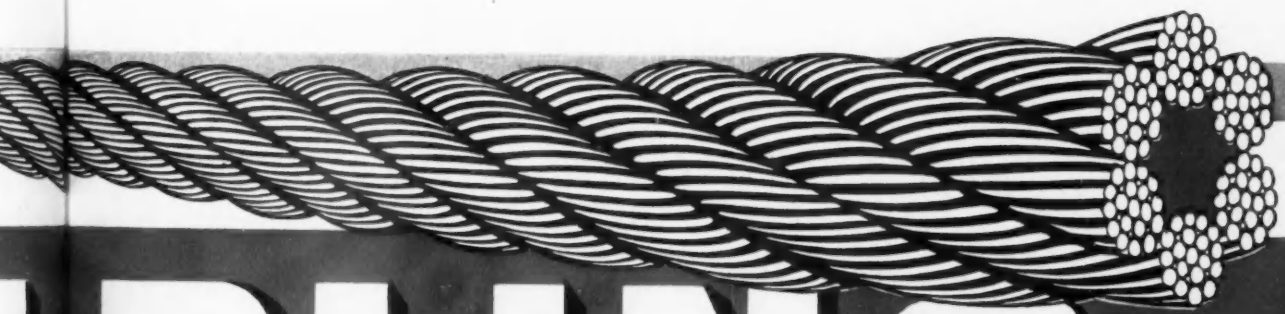
Wire Rope *Distributed by:*
THE NATIONAL SUPPLY CO.
REPUBLIC SUPPLY CO.

Wire Rope and Strand • Fittings • Slings • Cold Rolled Strip • Round and Shaped Wire • Wire Cloth and Netting • High and Low Carbon Acid and Basic Open Hearth Steels • Aircord, Swaged Terminals and Assemblies • Suspension Bridges and Cables • Electrical Wires and Cables • Aerial Wire Rope Systems

ROE

PACEMAKER IN

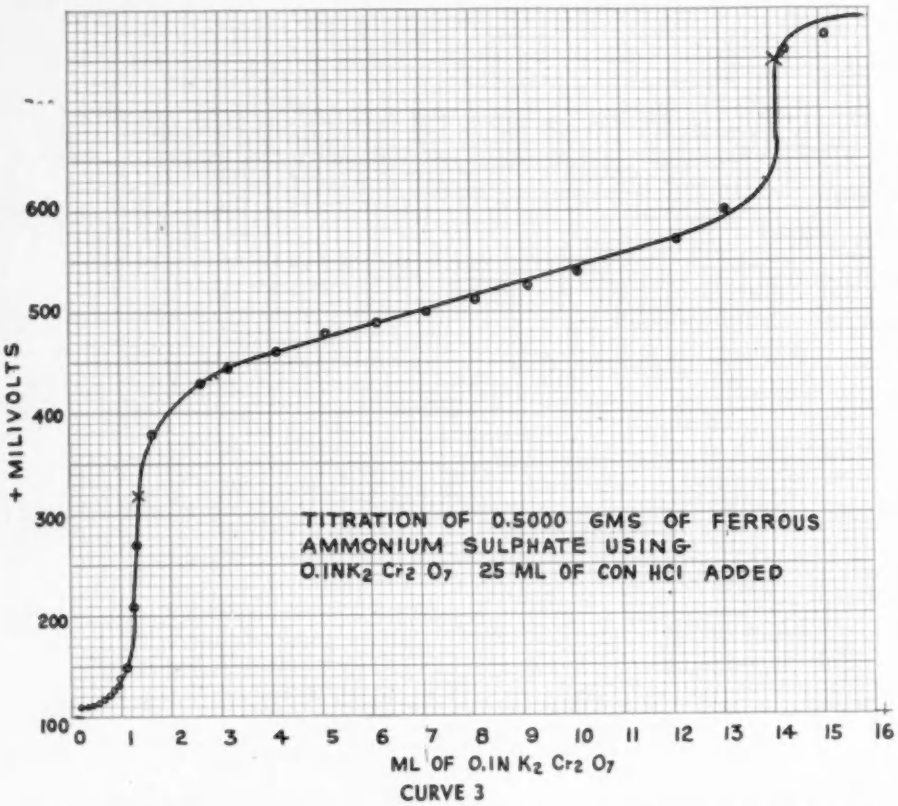
"BUY ROEBLING"



EBLING

JAR ROEBLING

WIRE PRODUCTS


+ MILIVOLTS
600
500
400
300
200
100
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
ML OF 0.1N $K_2Cr_2O_7$
TITRATION OF 0.5000 GMS OF FERROUS AMMONIUM SULPHATE USING 0.1N$K_2Cr_2O_7$ 25 ML OF CON HCl ADDED
CURVE 3

considerable difference whether the solution is acidified with sulphuric or hydrochloric acid. Also, from tables[3] it can be seen there is no relation between pH and oxidation potential of dichromate.

In the titration of ferrous iron,

(5) $Cr_2O_7 + 14\,H^+ + 6\,Fe^{++} \rightleftarrows 2\,Cr^{+++} + 7\,H_2O + 6\,Fe^{+++}$

Many authorities in the literature discuss the potentiometric of ferrous iron with dichromate and show that the acidity of the solution is of importance. However, they make no mention of the concentration of the acid. It has also been found that dissolved air has a negligible effect on the titration. The results are somewhat dependent on the dilution of the solution. In the titration of 0.01 N ferrous solution, the amount of dichromate required is about 0.4 percent higher than the calculated amount; the deviation increases slowly in more dilute solutions.[4]

It has been reported in the literature that ferrous iron may be titrated in the presence of stannous ion without destroying the latter. The literature, however, does not determine or state the equivalence potentials involved. When titrating in the presence of stannous iron the titration will show two inflections. The first is at the completion of the oxidation of the stannous chloride:

$Cr_2O_7 + 3\,Sn^{++} + 14\,H^+ \rightleftarrows 3\,Sn^{++++} + 2\,Cr^{+++} + 7\,H_2O$

The second inflection will occur at the completion of the oxidation of the iron (equation 5). The difference between the volumes of standard solution noted at the equivalence-points of these two inflections is the volume equivalent to the iron.

Since the abrupt change in potential occurs very close to the equivalence-point, the latter may be easily found by plotting the change of the E.M.F. against volume of reagent. It is usually assumed that the inflection-point, i.e., the middle of the jump in potential, indicates the equivalence-point precisely. Especially in oxidation-reduction reactions where we are titrating with a substance such as bichromate, the equivalence-point is not located at the middle of the break, but very near the end where the curve bends toward the bichromate side. The potential break, however, is usually very steep, and therefore the method above described is satisfactory for most practical cases when we are titrating with sufficiently concentrated solutions.

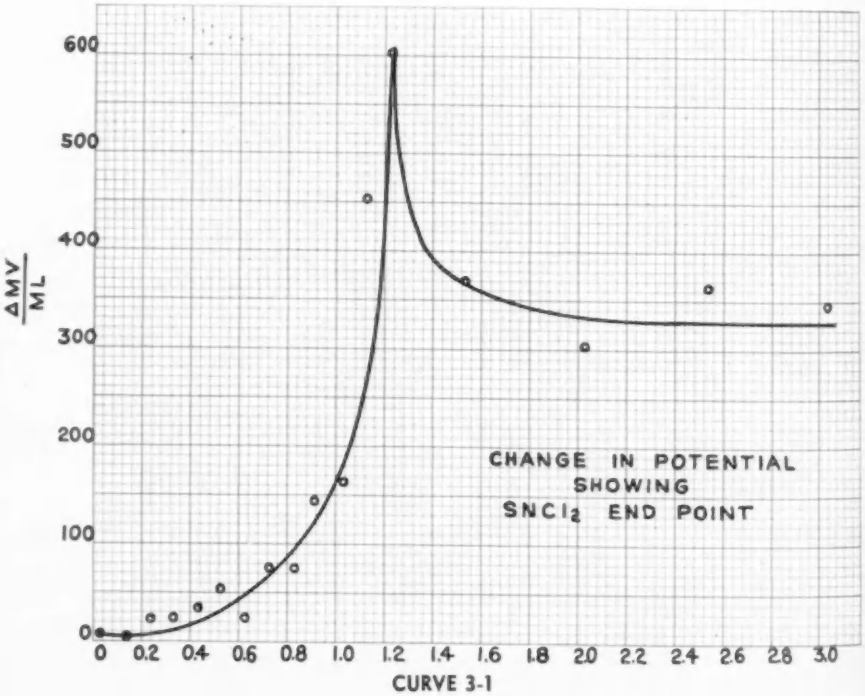
It is not necessary to plot all the data of the titration curve, since only the change near the end-point is of analytical importance. The method which was proposed by Hostetter and Roberts[5] is more accurate as well as simpler; it is to make a graph of the values of $\frac{\Delta MV}{ml}$ against mililiters of reagent. The maximum of this curve indicates the equivalence-point. It is not necessary to make a graph, as the maximum may be read directly from a table. This is done in the following way: In the vicinity of the equivalence-point we add the reagent drop by drop and determine the potential each time. We may then calculate the value of $\frac{\Delta MV}{ml}$ after the addition of each drop of reagent; the maximum is found with an accuracy of at least a drop of reagent. The drop volume must, of course, be known.[6]

Titrations with dichromate without an indicator do not yield a sharp end-point, since the greenish chromic ions formed obscure the yellow-orange color of the dichromate. Before oxidation-reduction potentials were used, external indicators, such as potassium ferricyanide or diphenylcarbazide were used. At their best, these were poor because a drop of the solution had to be removed in order to test for completeness of reaction.

Apparatus and Reagents

Beckman pH Meter, Laboratory Model G
Beckman Platinum Electrode No. 1281
Beckman Calomel Electrode No. 1170
0.1 N Potassium Dichromate (4.9035 gms/1)
Device for stirring solution
0.01 N Potassium dichromate (Dilute 100 ml. of 0.1 N to one liter)
Stannous Chloride ($SnCl_2.2H_2O$ 56 gms/1, water should be acid with HCl and some metallic tin kept in the bottle)
Concentrated Hydrochloric Acid
Ferrous Ammonium Sulphate ($Fe(SO_4)_2(NH_4)_2.6H_2O$

Since the literature states no equivalence potential for the potentiometric titration of iron the following procedure



CURVE 3-1

ALCO ACQUIRES BEAUMONT IRON WORKS

ALCO-Engineered Equipment Now Available for all phases of the Oil Industry

ALCO PRODUCTS' postwar manufacturing and service set-up for the Oil Industry has been advanced with the acquisition of Beaumont Iron Works.

This merger brings to the oil industry the advantages of being able to buy drilling, producing and refining equipment from a single dependable source.

The high standards always associated with ALCO Heat Exchangers, Pressure Vessels and Prefabricated Piping, and with Beaumont Oil-Well-Drilling and Production Equipment, will be firmly maintained by the present Beaumont and Alco management and personnel.

Jones & Laughlin Supply Company will continue as exclusive stock distributor of the Beaumont line.

ALCO is now prepared to supply, design, or build to your specifications, oil-drilling, producing and refining equipment units and components including:

- Drawworks
- Crown Blocks
- Traveling Blocks
- Tubing Blocks
- Diesel Engines
- Pumping Blocks
- Casing Heads
- Well-Head Assemblies
- Alloy Steel Castings
- Heat Exchangers
- Steam-Generating Equipment
- Coring Reels
- Prefabricated Piping
- Pressure Vessels
- Steel-Plate Work
- Weldments
- Air-Cooled Heat Exchangers
- Large-Diameter, Electric-Welded Steel Pipe

American Locomotive Company

ALCO PRODUCTS DIVISION

Plants: Dunkirk, N. Y. • Beaumont, Texas. Main Office: 30 Church St., N. Y. 8, N. Y.

DNT BEAUMONT IRON WORKS COMPANY

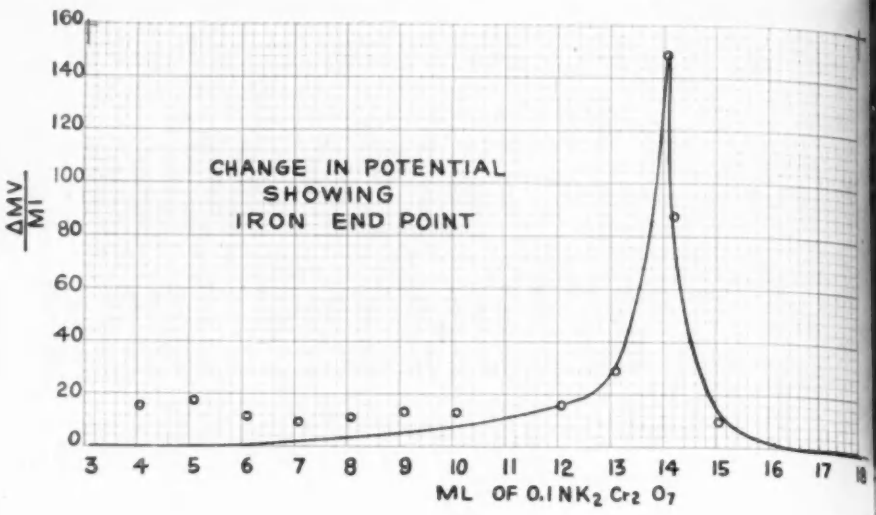
was followed in order to obtain the equivalence-point.

By calculations it was found that 30 ml. of 0.1 N Potassium dichromate was equivalent to 1.1763 grams of ferrous ammonium sulphate or for 0.01 N dichromate, 0.1176 gms of ferrous ammonium sulphate are required. This amount of ferrous ammonium sulphate was carefully weighed out and dissolved in about 50 ml. of freshly boiled and cooled distilled water; 25 ml. of con. HCl were added and the solution was heated to just below its boiling point and the platinum-calomel electrode assembly immersed into the solution. The titrating vessel was a 250 ml. beaker. The Beckman pH meter was adjusted and set on positive millivolts. The titration was begun by adding the dichromate in one ml. increments until the equivalence-point was neared. At this point the dichromate was added in 0.1 ml. increments and voltage readings were taken after each addition of reagent. In passing, it is of interest to note that no definite quantity of reagent must be added as long as the voltage readings are taken (for a graph can be plotted thus establishing the end point). At the equivalence-point a large increase in potential will be noted for small amounts of reagent added.

The following data is offered:

Curve number 1 shows the titration of 1.1763 grams of ferrous ammonium sulphate using 0.1 N Potassium dichromate, in the presence of 25 ml. of concentrated Hydrochloric acid. Curve number 1-1 is a plot determining the end point.

ml. of 0.1 N $K_2Cr_2O_7$	+ Millivolts	$\frac{\Delta mv}{ml}$
0	349	..
20	560	0
24	580	5
26	596	8
27	608	6
28	620	12
29	645	25
29.5	670	50
29.8	710	133
29.9	740	300
30.0	841	1010 * end point
31.0	875	34
32.0	891	16
34.0	910	10



CURVE 3-2

Curve number 2 shows the titration of 0.1176 grams of ferrous ammonium sulphate using 0.01 N $K_2Cr_2O_7$ in the presence of 25 ml. of concentrated hydrochloric acid. Curve 2-1 is a plot determining the end point.

ml. of 0.1 N $K_2Cr_2O_7$	+ Millivolts	$\frac{\Delta mv}{ml}$
0	420	..
20.0	589	0
25.0	605	3.2
26.0	610	5
27.0	620	10
28.0	635	15
29.0	655	20
29.1	660	50
29.5	672	30
29.7	682	50
29.8	690	80
29.9	700	100
30.0	720	200
30.1	753	330 *
30.2	770	170
31.0	790	25
32.0	810	20
33.0	810	0

* Graphical end pt. 30.08 ml.

	Actual % Fe	Theoretical % Fe	% Deviation
Run No. 1	14.24	14.24	0.0
Run No. 2	14.28	14.24	0.04

The equivalence potential for ferrous iron was found to be 748 millivolts.

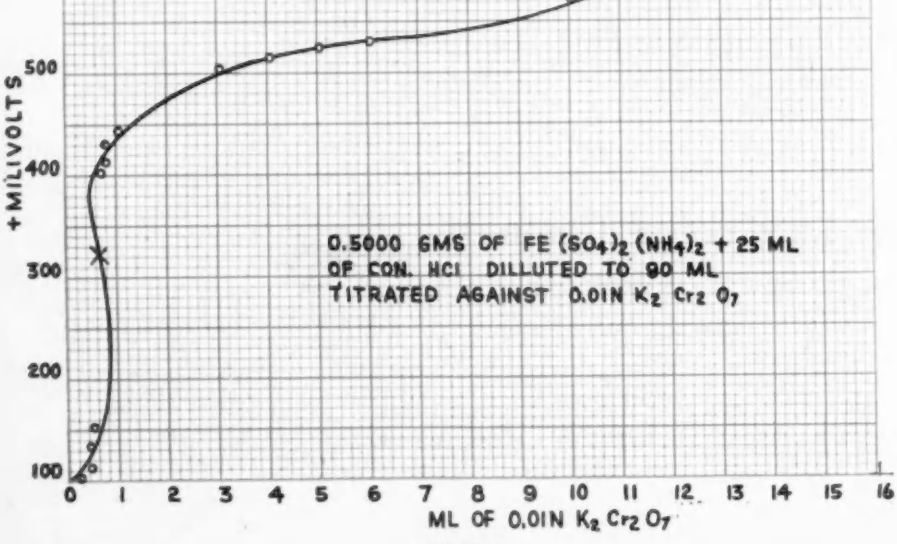
In order to determine the equivalence potential for ferrous ion in the presence of stannous ion, thus allowing the iron present in any solution to be determined, the following data was taken in the following manner.

The titrating procedure was the same except for the dropwise addition of stannous chloride. The stannous chloride was added while the solution was just below the boiling point until the solution was colorless or the voltage produced was below 200 millivolts.

The following data were taken:

Curve number 3 shows the titration of 0.5000 grams of ferrous ammonium sulphate using 0.1 N $K_2Cr_2O_7$ in the presence of 25 ml. of concentrated hydrochloric acid. Ten drops of $Sn\,Cl_2$ added. Curve 3-1 is a plot determining the tin end point. Curve 3-2 is a plot showing the iron end point.

ml. of 0.1 N $K_2Cr_2O_7$	+ Millivolts	$\frac{\Delta mv}{ml}$
0	100	..
0.1	108	0
0.2	110	20
0.3	112	20
0.4	115	30
0.5	120	50
0.6	121	10
0.7	128	70
0.8	135	70
0.9	149	140
1.0	165	160
1.1	210	450
1.2	270	600 *
1.5	380	366
2.0	410	300
2.5	428	360



CURVE 4

LANE-WELLS
Packer Ring Sets for Olympic Packers

FLOSEAL

MEAN LONGER LIFE AND BETTER PERFORMANCE UNDER SEVERE OPERATING CONDITIONS

From Oil Well Operators in almost every producing field have come enthusiastic reports about Lane-Wells FLOSEAL—the integrated Packer Ring Sets for Olympic Packers.

HERE'S THE REASON WHY!

FLOSEAL rings are graded so the loading expands the inner rings first. More load is picked up by the adjacent outside pair. The result is *Easy Setting* whether in shallow wells or deep ones. FLOSEAL Packer Rings are built to withstand heat. This means *Longer Life* in deep wells.

You'll have to put FLOSEAL to work under the toughest conditions to appreciate how *BIG* an improvement has been made.

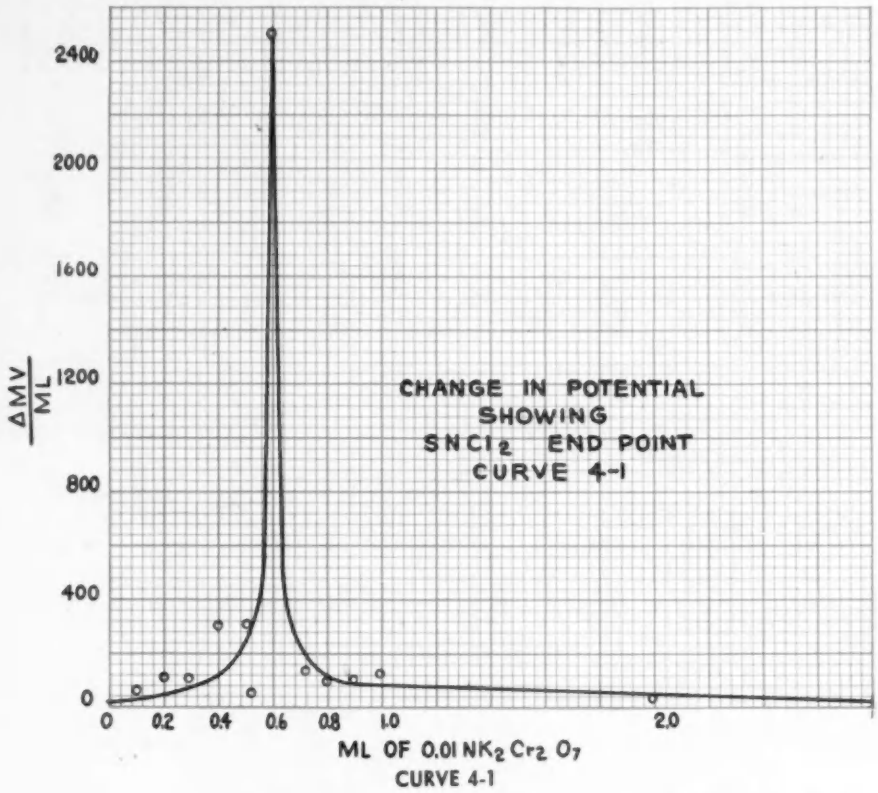
You can prove this for yourself by calling—"Lane-Wells".

Tomorrow's Tools—Today!

LANE WELLS COMPANY

LOS ANGELES — 35 BRANCHES | HOUSTON | OKLAHOMA CITY — 24-HOUR SERVICE

GENERAL OFFICES, EXPORT OFFICE AND PLANT:
5610 South Soto St., Los Angeles 11, California



CURVE 4-1

3.0	445	0
4.0	461	16
5.0	478	17
6.0	490	12
7.0	500	10
8.0	512	12
9.0	525	13
10.0	538	13
12.0	570	16
13.0	600	30
14.0	751	151 *
14.1	760	90
15.0	771	11
14.0	770	38
15.0	790	10

* End point.

Curve number 4 shows the titrations of 0.0500 grams of ferrous ammonium sulphate using 0.01 N $K_2Cr_2O_7$ in the presence of 25 ml. of concentrated hydrochloric acid. Three drops of $SnCl_2$ added. Curve 4-1 is a plot determining the tin end-point. Curve 4-2 is a plot showing iron end-point.

ml. of 0.1 N $K_2Cr_2O_7$	+ Millivolts	Δmv / ml
0	85	0
0.1	90	50
0.2	100	100
0.3	110	100
0.4	130	200
0.5	150	200
0.6	400	2500 *
0.7	413	130
0.8	421	80
0.9	430	90
1.0	440	100
2.0	475	35
3.0	495	20
4.0	510	15
5.0	520	10
10.0	575	0
11.0	590	15
12.0	610	20
13.0	665	55
13.1	680	150
13.2	699	190
13.3	720	210
13.4	745	250 *
13.5	751	60

* End point.

	Actual % Fe	Theoretical % Fe	% Deviation
Run No. 3	14.29	14.24	0.05%
Run No. 4	14.29	14.24	0.05%

The equivalence potential for the oxidation of stannous ion to stannic ion in the presence of iron salts was found to be 310 millivolts.

The following procedure for the potentiometric titration of iron is offered.

Pipette a 50 ml. sample of unknown water into a 250 ml. beaker. Heat until almost boiling and add 25 ml. of concentrated HCl. Place the platinum-calomel electrode assembly into the beaker and set the pH meter on "plus" millivolts. Place the meter on the reading position, begin stirring, and add stannous chloride drops until the potential is below 310 millivolts. Add the 0.01 N potassium dichromate slowly until a large inflection or 310 mv is reached, carefully noting voltages and volume after each addition of reagent. Then continue the addition of the reagent until 748 mv is reached. It is not necessary to plot a graph showing the relationship between the millivolts and amount of dichromate used as the maximum may be read from a table. This is done in the following way. In the vicinity of the equivalence points, 310 mv for Sn, and 748 mv for iron, reagent may be added drop by drop and the potential determined each time. The value of

$$\frac{\Delta mv}{ml}$$

may then be calculated and the maximum noted.

When titrating a 50 ml. sample with 0.01 N potassium dichromate, (ml. of dichromate) (0.0005584) (20) (1000) = p.p.m. Fe present.

Conclusions

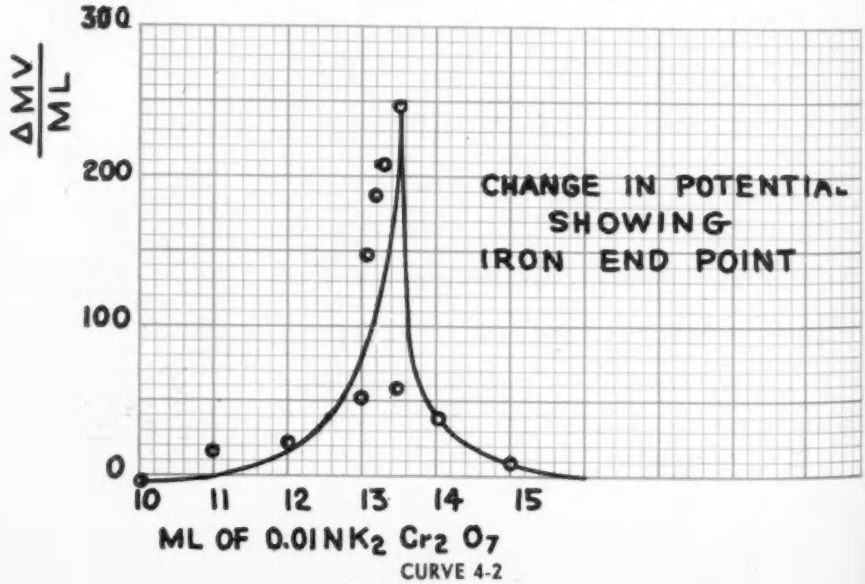
A rapid, accurate method for potentiometric titration of iron has been developed. The equivalence potentials for the titration of ferrous iron in the presence of stannous ion have been determined. This method supercedes other volumetric methods using either internal or external indicators. This method is suitable for determining the amount of iron present in any solution and more especially suited for rapid determination of iron present in water found in gas-condensate wells.

Acknowledgments

The writer wishes to express his appreciation to Harold Denton, P. E. Chaney, and W. E. Barnes for advice in formulating procedure and assistance in the writing of this paper, and to Jack W. H. Surles for the preparation of the graphs. The writer also wishes to express his appreciation to Sun Oil Company for permission to publish this paper.

BIBLIOGRAPHY

[1] Textbook of Quantitative Inorganic Analysis, Kolthoff and Sandell, pp. 461-463.
[2] Potentiometric Titration, Kolthoff and Furmann, pp. 6-8.
[3] Ibid, p. 275.
[4] Ibid, p. 276.
[5] Hostetter and Roberts, J. Am. Chem. Soc., 41, 1337 (1919).
[6] Potentiometric Titrations, Kolthoff and Furmann, pp. 94-95.



CURVE 4-2

Exclusively THE NEW AND PATENTED BY JOHN H. WIGGINS

Wherever volatile liquids are stored or processed, Wiggins structures assure important savings, greater safety!

For years General American Transportation Corporation has been out in front in rendering service to the petroleum industry. Now General American has fortified its leadership by acquiring the sole rights to manufacture and sell, as exclusive licensee under John H. Wiggins patents, the new and improved Wiggins vapor-saving structures.

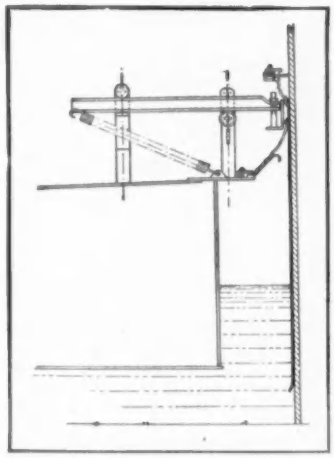
The new Wiggins Pontoon Roof, featuring many improvements, is typical of the many new and improved Wiggins structures manufactured by the General American Plate and Welding division. It can help you solve your evaporation-loss problems, safely and surely, because it floats directly on the surface of the liquid, stops evaporation loss, and reduces fire hazard.

COST AMORTIZED QUICKLY IN SAVINGS

Here are some of the losses which are prevented, eliminated, or reduced by the new and improved Wiggins Pontoon Roof, illustrated at ieft:

BREATHING LOSSES . . . Whenever increasing temperature causes expansion in vapor space of tanks having a fixed roof, vapor is vented to atmosphere. Losses resulting from this daily exhalation of vapor are called breathing losses—an expensive waste which is stopped by "improved" Wiggins Pontoon Roofs because of their elimination of *active* vapor space.

FILLING LOSSES . . . With fixed roof tanks, vapor is displaced through roof vents during filling. When a tank equipped with an "improved" Wiggins Pontoon Roof is filled, no vapor is displaced because roof floats on the liquid surface. No filling loss occurs from the small space between roof and tank shell because the volume of this space remains constant even when roof is rising.



Section of new and improved Wiggins Pontoon Roof seal showing details of shoes used with butt welded tank shells. A continuous strip of flexible seal material forms wind-proof connection between top of shoe and roof of deck.

BOILING LOSSES . . . In addition to eliminating all filling loss and reducing breathing loss to a minimum, the "improved" Wiggins Pontoon Roof traps vapor, formed by boiling, under the deck. This vapor is retained under roof until recondensed by cooler temperatures.

PROTECTION FROM FIRE

By eliminating the conditions which permit contents of tank to burn, the "improved" Wiggins Pontoon Roof effectively helps prevent fire. Liquid beneath deck cannot become ignited because there is insufficient oxygen present to support combustion. And since the tank has an open top, there is no danger of an explosive mixture forming above roof. The only point where a fire might conceivably burn is in space between rim of roof and tank shell. This space, however, is sealed with a fire-resistant material consisting largely of asbestos woven with glass, and repeated tests have proved that even if seal becomes damaged, a fire in this area can be easily extinguished, even after burning for some time. A complete discussion of the fire retardant features of the unimproved Wiggins Pontoon Roof may be obtained in the "Report on Floating Roof for Vertical Steel Storage Tanks" issued by the Underwriters' Laboratories, Chicago, Ill.

WIDE APPLICATION TO NEW OR EXISTING TANKS

The "improved" Wiggins Pontoon Roof is applicable to either riveted or welded tanks of all 15 ft. diameters or larger. It can be furnished with new tanks or installed in existing tanks, and for this reason finds wide application at pipeline stations, refineries, bulk stations, marine terminals and chemical plants. A sound investment for any large tank storing crude oil or gasoline, the "improved" Wiggins Pontoon Roof is also recommended for service on working tanks, blending tanks and tanks containing corrosive oils.

For complete information regarding the "improved" Wiggins Pontoon Roof or other "improved" Wiggins structures and their possible application to the solution of your special problems, get in touch with our nearest office.

General American Transportation Corporation

maintains offices in Chicago, New York, Washington, Cleveland, Buffalo, Pittsburgh, St. Louis, New Orleans, Tulsa, Dallas, Houston, Seattle and Los Angeles

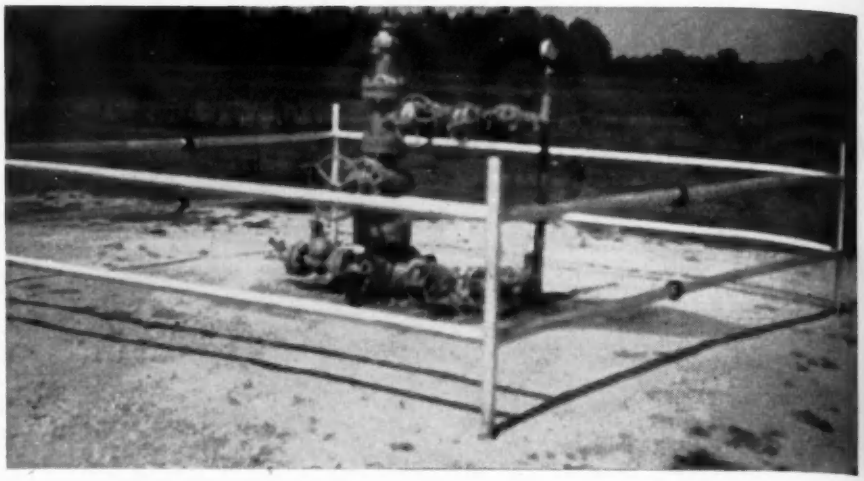
Separable Pipe Enclosure Protects Well Without Retarding Work-Overs

Where well-head equipment must be enclosed to prevent grazing stock from possible contact with the Christmas tree or becoming trapped by the cellar, enclosures fabricated from salvaged 2-inch pipe offer effective fences with the expenditure of relatively little material.

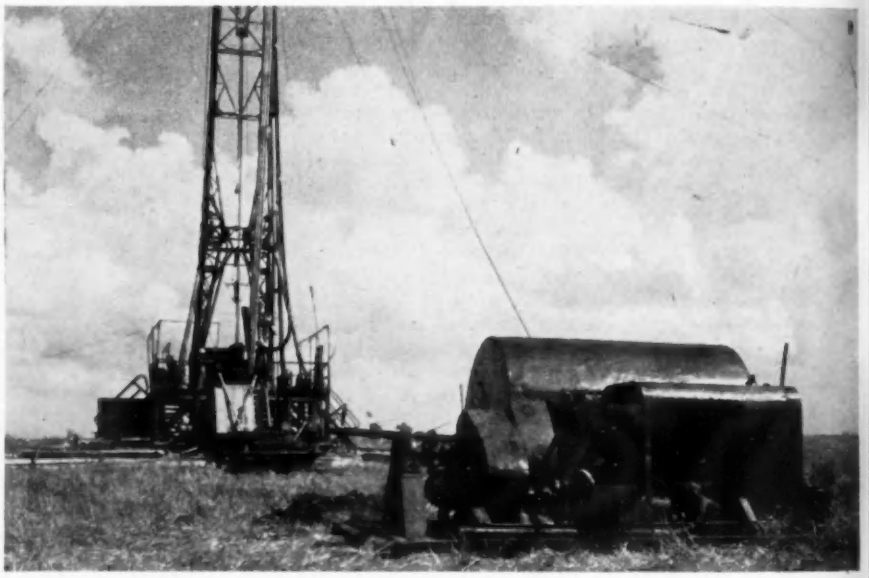
LEASE RAILING

A fence composed of four corner posts and a pair of rails welded to form each side is ample to bar out stock, and light enough to be readily shifted when the well must be serviced. One producer makes the fence more readily removable by setting unions into two opposite sides so that the fence may be parted and each moved back by two men. With this construction there is no danger of damage to the tree, as might be sustained were attempt made to lift the square over the valves and gauges topping the tree.

The corner posts are set into 2½-inch pipe sockets set into concrete at the proper spots. If the sand has drifted into these posts and locked the posts in place, the uprights may be freed by blowing a jet of air—or gas if it is available—into the annulus until the sand has been displaced. The same method is used to clear the sockets if they have become filled during work-over operations.



Spread Location of Wire-Line Unit Improves Set-Up



On work-over jobs, it is sometimes difficult to find a place to put all of the equipment necessary to keep the rig running. The wire-line reel and prime mover set-up is necessary to pull cores and to swab the well in after the tubing is run. This equipment is rather heavy on rigs used to work over deep wells, and takes up much of the room on the rig floor. One operator sets this equipment about 100 feet from the well center and runs the sand line directly over the top of the derrick. This unit is all mounted on one set of skids and the truck driver can easily spot it some distance from the well. Stakes are driven at an angle on the front end to hold it in line and its own weight usually is sufficient to counterbalance the weight of the line in the hole plus its load.

WELL SERVICING

This unit is well away from the well and is not in the way of the rotary in work-over jobs. Moreover, it is used mostly when the well is being brought back on production and the distance from the well head is an added safety feature.

$5.00 is paid for each illustrated acceptable contribution. Mail to The Editor, THE OIL WEEKLY, P. O. Box 2608, Houston 1, Texas

PENBERTHY
"REFLEX"
WATER GAGE SET

For oil field, locomotive type and marine boilers. Water shows black — steam shows white; the water level is unmistakable. U-Bolt construction is strongest and simplest to service. Glass replaced by simply removing nuts on face of gage . . . unnecessary to work between gage and boiler. Conforms with A.S.M.E., Federal and State requirements when used for pressures specified by their respective codes.

This is one of the complete line of Penberthy gages that meet every liquid level gage requirement.

See Pages 2450 to 2455, Composite Catalog.

PENBERTHY INJECTOR CO.
DETROIT MICH. Canadian Plant WINDSOR, ONTARIO

PRODUCTION HINTS

Hydraulic Test Checks Tubing While in Well

TESTING TUBING

After the string of rods has been pulled on a well, paraffin and scale are frequently found to have stopped or sealed any holes which may exist through the tubing string, making the discovery of the leaks difficult after the pipe has been pulled and laid down. In some fields it is routine practice to test the string for possible leaks before pulling it, as it is easier to check the entire string than to refill and test each joint of pipe.

The hydraulic pump used for testing casing is readily adapted to testing tubing strings, simply by making a flexible connection between pump discharge and tubing. If the string be filled from the top by gravity, relatively little pump effort is required to build up a pressure as high as may be desired for testing the string.

The pressure gauge at the well-head not only indicates surface pressure on the string but, if the pressure reading remains constant after the pump is stopped, also indicates a tight string. Drop in pressure, or pumping being required to maintain the pressure, denotes a leaky string. Once this condition is indicated, continued pumping will force the fluid through the leaks, clearing them of paraffin and scale so that they may easily be detected by visual examination when the string has been pulled.

Salvaged Oil Drum Mounts and Supplements Mail Box

LEASE GADGETS

On lease roads which are graded at rather frequent intervals, the mail box is usually a nuisance for the road patrol. To get around this difficulty a movable mail box was constructed from a used oil drum by the pumper on one lease. The drum was prepared by cutting a rectangular hole in the top third of the side as shown. If cement is available, it can be mixed with sand and water in a weak mixture and placed in the bottom of the drum for ballast. Otherwise, sand and gravel and rock are used. A hole is placed near the bottom to permit what little rain water blows in to drain from the drum. Larger packages, that will not go into the mail box, may be placed in the space remaining beneath the mail box. The box may be tacked to the drum with a welding torch, or fastened down as shown by passing wire through holes cut in the drum and box.

When the road shoulder is to be graded, the drum may be canted and rolled on the chime without lifting or calling in hoisting equipment.

INCREASE PRODUCTION
Clean Out with a
MILLER Sand Pump

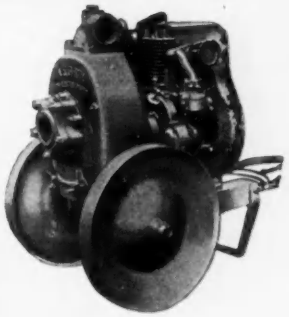
A Quarter of a Century with thousands and thousands in satisfactory use prove its World-Wide popularity.

Miller Sand Pump Co.
General Office Box 4516
OKLAHOMA CITY 9, OKLA.

EXPORT OFFICE
30 Rockefeller Plaza
NEW YORK CITY 20, N. Y.

See Composite Catalog Page 1907

The Largest Contractors Equipment Company in the South

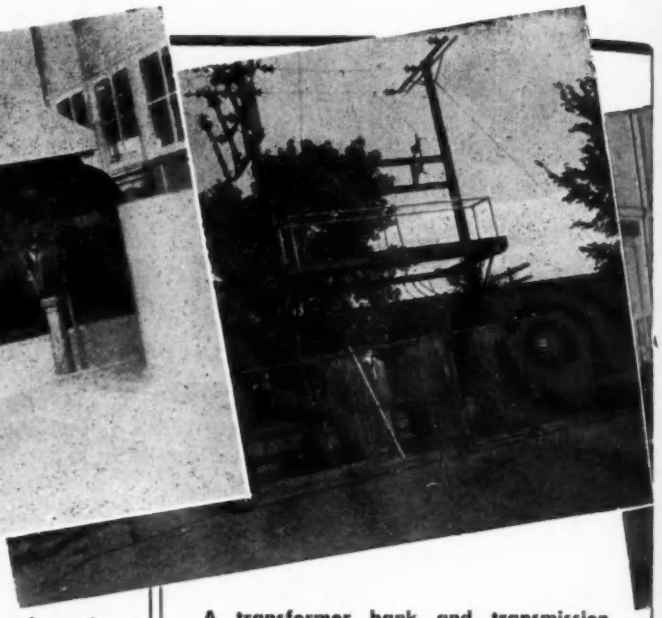


IDEAL GENERAL UTILITY PUMP
This Jaeger Model 2-P serves many needs, efficiently and economically, on the lease. Easily portable it can be moved from job to job quickly. It is ideal for picking up waste water and oil on the lease . . . furnishing water for concrete. Many permanently install it on tank batteries to pump oil, also to pump water out of fire walls.

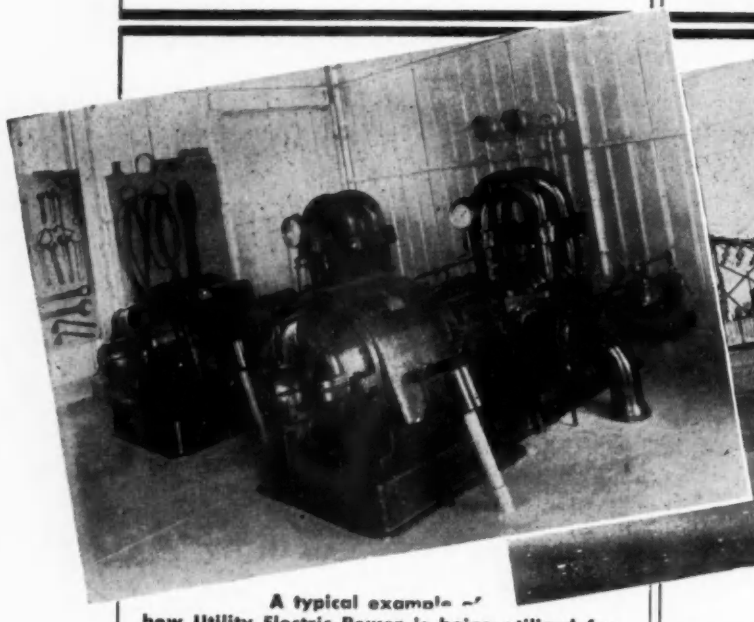
BROWNING-FERRIS MACHINERY CO.
DALLAS-HOUSTON

Power that keeps

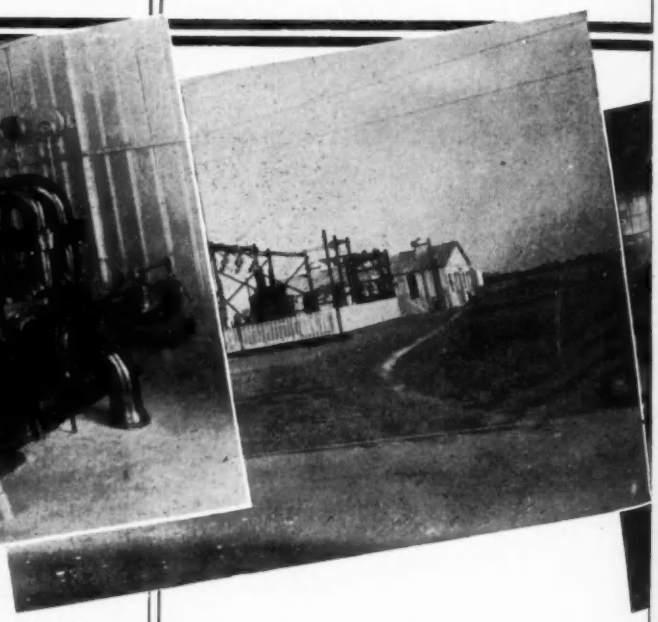
A typical installation of motors and ventilating air ducts of a WEP 20" products line station.



A transformer bank and transmission line to a main line major company pumping station in Oklahoma.



A typical example of how Utility Electric Power is being utilized for efficient and economical operation of pipe line stations throughout America.



Exterior view of a WEP 24" crude oil pump station.

The Outlook

Opposition to ratification of the Anglo-American petroleum agreement is expected to be voiced before the Senate Foreign Relations Committee by a cooperative which is planning international operations and which will charge that the pact "freezes" the possibilities of activities in the Middle East.

* * * *

Italy, whose supplies of oil have been sharply restricted since her surrender, will be permitted to purchase all the petroleum she can pay for, but it is not believed she will be able to afford full pre-war acquisitions for some time to come, in view of the need for other essentials.

* * * *

Internal Revenue Bureau regulations requiring reports by employers on all advances or reimbursements made for traveling or other expenses of employes, recently issued, are due to be revised to meet a flood of complaints regarding the paper work involved and the possibilities that employes' returns will be all tangled up because of their failure to report such sums, which do not constitute income to them.

* * * *

The Netherlands government will set up a Netherland Indies Rubber Administration to exercise general control over rehabilitation of the rubber industry with a view to resuming exports as rapidly as possible. Materials and equipment purchased in the United States, England and Australia are on their way and will be allocated among the plantations. Trading negotiations initially will be on a "single seller" and "single buyer" basis and it may be some time before free trading is permitted.

* * * *

Congress will get down early next year to consideration of comprehensive tax revision, and will weigh the desirability of further cuts in income taxes against the equally desirable balanced budget. Proponents of further tax cuts than provided in this year's legislation contend they will stimulate the maintenance or production of income and more stable revenues, aiding in reconversion.

* * * *

The State Department's foreign service is being overhauled with a view to improving and adapting it to postwar conditions, meeting complaints that it is not effective in promoting our trade abroad as now set up. Major complaint is the slowness and incompleteness of reports submitted to Washington and delay in getting information of vital importance to American producers and exporters.

* * * *

Steel companies report effective use of an antioxidant and rust preventative for the coating of tubular products. The product, "Unikel", was developed by Russia for removing rust from captured German materiel.

* * * *

In its current economy drive the government seeks to abolish the stripper-well subsidy after the first of the year. The move would be bitterly opposed by stripper-well operators who claim that it would not only hurt them but the nation as well by causing premature abandonment of millions of barrels of oil in stripper areas.

* * * *

"Buy British" seems to be a favorite postwar slogan, indicating a practice of promoting trade within the Empire at the possible expense of commerce with other nations. Oil field equipment tangles already are being reported.

* * * *

Automatic devices to control and operate present heavy manual operations around drilling rigs are in the offing. Some, such as air-operated drill pipe slips, already have made their appearance. Others will follow.

SIMPLICITY IS THE FIRST REQUISITE OF SAFETY

Look for the parts that aren't there!

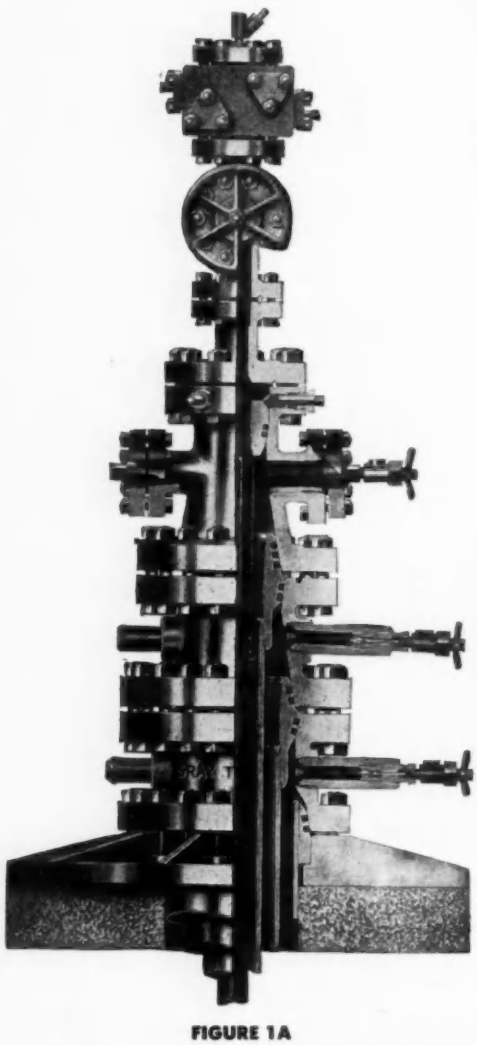


FIGURE 1A

Complete Well Head Assembly equipped with Composite Manifold, Valve Removal, Installation and Removal.

Look for the parts that have been there, but aren't there, in the completed well manifold, because provision was made for their removal to the position of accessories after they had completed their operating function—

the little side outlet valve, the big blowout preventer, the master valves with gaskets and packing materials exposed to large pressure subject areas, the welding flanges with lever arm exerting stresses that break the weld, etc.

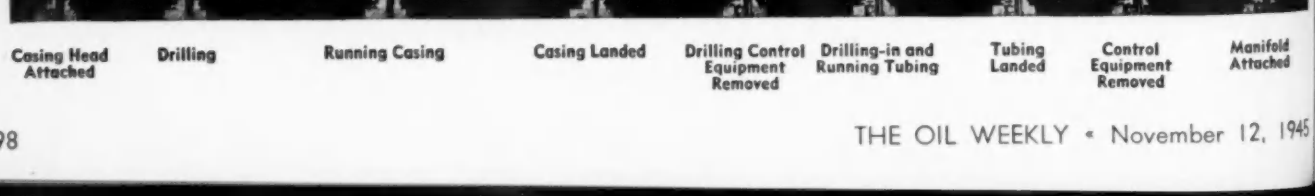
We cannot provide strength in the weaker, highly flowable short-lived materials that must be used as temporary sealing mediums in blowout preventers, strippers, etc., equal to the strength of steel used in the bodies, flanges and studs, but we can and have provided a means of assembling and disassembling this equipment with control, thereby removing that which must depend on short-lived materials from positions where long life under conditions that do not permit replacement is the first essential.

The whole is greater than any of its parts. Look for the parts that aren't there!

THE WHOLE IS GREATER THAN ANY OF ITS PARTS

GRAY
TOOL COMPANY
HOUSTON

West Coast Distributor: WAGNER-MOREHOUSE, INC., Los Angeles. *Export Representative:* GUY E. DANIELS, 30 Rockefeller Plaza, New York City



Casing Head Attached | Drilling | Running Casing | Casing Landed | Drilling Control Equipment Removed | Drilling-in and Running Tubing | Tubing Landed | Control Equipment Removed | Manifold Attached

The Week's News

THE spelling out of the British territories to which the proposed Anglo-American petroleum agreement will apply was disclosed last week to have been purely a formality to meet industry suggestions for a definite delineation of the areas covered as preferable to the original designation of "all" British colonies. Page 105.

Hill Makes Statement—George A. Hill, Jr., one of the oil industry consultants at the Anglo-American oil pact September conferences in London, has written for THE OIL WEEKLY his views on the revised agreement. Page 104.

Sterling Area Statement—An official explanation of the reasons why the so-called "sterling area" was set up after England went off the gold standard indicated that it will have to be continued, at least until British export trade reaches a point where adequate dollar exchange becomes available for trade with this country. Page 100.

More Tideland Suits—Further suits to get government title to the tideland oil deposits will be filed by the Department of Justice if the present suit against California is decided in favor of the government by the Supreme Court. Each state will probably be subjected to a separate suit. Page 102.

RFC Surplus Sales—The Reconstruction Finance Corporation is beginning definite program for the disposal of surplus oil products and drilling and refining equipment and already has thrown considerable volumes on the market. Page 103.

International Rubber Parley—The international rubber group studying the postwar situation will meet in London this month for discussions which eventually may develop a rubber pact similar to the British-American oil treaty. Page 103.

Reverse Rubber Process—Meanwhile, the procedure for reconverting the domestic rubber industry back to the use of natural crude will be the reverse of that which switched it from natural to synthetic. Page 103.

Senate Hearing Schedule—The special Senate Petroleum Committe is prepared to go ahead this week with its hearings on the disposition of the war-built pipe lines, tankers and aviation gasoline refineries, while the Senate Judiciary Committee has indefinitely postponed scheduled hearings on the legislation relinquishing any federal claim to tidelands ownership. Page 101.

"Knock Out Oil"—The strategy of aerial bombing was disclosed by General H. H. Arnold, chief of the Army Air Forces, to be based on the theory that the destruction of the oil industry alone, or any other equally-vital industry, will set up a cancer in an enemy's economy which eventually kills his ability to wage war. Page 101.

Stripper Subsidy Future—Future of the stripper well subsidy continues uncertain as reconversion and price administration officials seek a substitute which will keep alive the thousands of wells that will almost automatically shut down if premium payments are suspended. Page 102.

API Meeting—Chicago is filling up with oil industry representatives gathering for the Silver Jubilee meeting of the API. Story below. Full program on page 58.

Padre Island Claim—The state of Texas last week lost all claim to Padre Island on the Texas Gulf Coast as a result of a Texas Supreme Court decision. It is possible that the case might be carried to the United States Supreme Court.

Pacific AAPG Meet—John C. Reed of USGS was among the speakers at the Pacific Section AAPG meeting. Page 100.

War Claims—Oil companies which may have claims against the Alien Property Custodian based on enemy properties or patents seized during the war have been given an extension of time until next April 1, in which to file them.

Oil Men Gathering at Chicago for American Petroleum Institute Meet

Interest in the nation's oil industry this week will be focused on Chicago, where the Twenty-fifth Annual, Silver Jubilee, meeting of the American Petroleum Institute will be held at the Stevens Hotel.

All available hotel space in Chicago was rapidly being filled over the weekend by oil men throughout the U. S.

Although this is the first annual meeting since the institute's second war conference in November, 1943, and one of the most important annual meetings in API history, limited hotel space will necessarily keep the atendance below previous records.

The program will feature nationally prominent speakers on subjects of particular interest to the industry. The speakers include Petroleum Administrator for War Harold L. Ickes; Lieutenant General James H. Doolittle of the U. S. Army Air Corps; Lieutenant General Raymond S. McClain of the U. S. Army, Colonel Donald L. Putt, Deputy Commanding General, Intelligence (G-2), Air Technical Service Command at Wright Feild Ohio; Vice Admiral Ben Moreell, Chief of the Bureau of Yards and Docks and Officer in Charge of Navy Petroleum Plant Office; C. R. Smith, Chairman of the Board, American Airlines, Inc.; Dr. Clark Goodman, of Massachusetts Institute of Technology; Dr. Paul H. Giddens, curator of the Drake Well Memorial Park, Dr. Virgil Jordan, president of the National Industrial Conference Board, and others.

Several meetings of groups associated with the oil industry are scheduled during the Chicago sessions.

On Monday morning the API Committee on Vocational Training in Refining will present a motion-picture-illustrated program on "Application of Visual Aids to Personnel Training." Sterling Mudge, supervisor of training for Socony-Vacuum Oil Company, Inc., will preside.

On Monday afternoon will be held the second annual oil trade association conference on public relations. President W. R. Boyd, Jr., will preside and talks will be given by Glenn Griswold, New York, on "Don't Say I Didn't Tell You"; J. Robert York, Chicago, on "Industry and Public Opinion" and Theodore R. Sills, Chicago, on "Strikes and Their Impact on Public Opinion."

On Tuesday afternoon will be organized a new club for pipe liners of the "old timers" classification. Aims will be along the same lines of those of the 25-Year Club which are exclusively for fellowship and cooperation.

Tuesday at 6:30 p.m. there will be held the sixth annual banquet of the 25-Year Club. Otto D. Donnell, The Ohio Oil Company, president, will preside. There are 300 members on the rolls, all with a minimum of 25 years in the refining and marketing branches.

Program of the three-day meeting is carried on pages 58 and 61 of this issue of THE OIL WEEKLY.

Oil Men Honored

Two long-time members of the oil industry were last week awarded the meritorious civilian service emblem by the War Department for their services as consultants to the fuels and lubricants division of the office of the quartermaster general.

They were Albert W. Watt, connected with Standard Vacuum Oil Company for 41 years, and Claggett H. Pattie, for 17 years with the southern division of Shell Oil Company at New Orleans.

Necessity of Sterling-Area Controls Outlined by British Information Body

Britain's position on the question of the sterling area, recently brought into the limelight by requirements that American companies operating in the Middle East purchase equipment for repair and construction of their plants within the area, was explained this week officially by the British Information Services.

The prewar sterling area included the entire British Commonwealth with the exception of Canada and Newfoundland, and Portugal, Egypt, Iraq, Thailand, Sweden, Norway, Finland, Denmark, Estonia, Iran and Latvia. Most of the non-British nations left the arrangement following the outbreak of war, and it now consists of the British Commonwealth and Empire, except Canada and Newfoundland, British mandated territories, protectorates and protected states, Egypt, the Sudan, Iraq, Iceland and the Faroe Islands.

Imports Are Limited

A "dollar pool" was created in these areas during the war to make sure that the limited supply of dollars was not wasted, but used for the American imports of which the sterling area had the most pressing need. Although the BIS said foreign exchange control is not used to restrict the imports of American goods into the sterling area, the actual effect, of course, is to limit such imports to the extent of available dollar resources, which are allocated among the various parties to the agreement by England.

"The sterling-area controls were necessitated by the extreme shortage of dollars and other forms of foreign exchange," the BIS explained. "This was caused by war circumstances: on the one hand, Britain and other sterling-area countries bought immense quantities of goods and services in the United States; on the other hand, British receipts of dollars were greatly reduced by the slashing of the export trade, the sale of overseas investments, the loss of shipping, and so on. The critical shortage of foreign exchange is as much a product of the war as, say, the destruction of British houses. And, like bomb damage, it has left serious problems remaining now that the war is over.

The British Problem

"The British economy is completely dependent upon large imports of food and raw materials. Before the war, Britain imported two thirds of her food and most of the raw materials for her factories. To make up for the loss of investments and other 'invisible exports' she will have to increase the volume of her exports by at least 50 percent over the prewar level in order to buy the same volume of imports as she bought before the war. Inevitably it will take some time to achieve the five-fold increase which this involves.

"The British financial problem has two aspects: short-term and long-term. Most pressing is the immediate problem of how to pay for the food and raw materials that Britain must import in the next two or three years.

"The long-term problem is to increase British exports to a volume sufficient to make up for the losses of investment and other income and to pay off the huge overseas indebtedness."

Pacific Section AAPG Holds Annual Convention

The 22nd annual meeting of the Pacific Section of the American Association of Petroleum Geologists was held in Los Angeles November 8 and 9. Highlighting the two-day program were papers by Dr. Chester R. Longwell, AAPG distinguished lecturer who spoke on "Stratigraphic and Structural Problems of Southern Nevada and Western Arizona," and Dr. Bailey Willis, professor emeritus of geology, Stanford University, who spoke on "Terrestrial Dynamics."

Of general interest was the review of California exploration during the war by Frank S. Parker, Signal Oil and Gas Company. Parker said that in the first nine months of 1945 twenty wildcats out of a total of 202 drilled in California were successful. The seven major companies drilled 80 wells and made 10 discoveries of which four were "barely commercial." The four most active independents (Amerada, Continental, Rothschild and Western Gulf) drilled 31 exploratory wells and made three discoveries of which one was scarcely commercial. All other companies drilled 91 wells and made 3 discoveries all commercial.

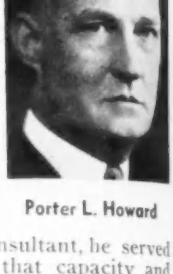
Parker said that the overall wildcat success percentage was 10.2 percent. New pool tests were 31 percent successful and outposts 42 percent successful. The new discoveries in the first nine months of 1945 may total some 25 million barrels of new reserves, but Parker termed this a "rugged estimate."

John C. Reed of the U. S. Geological Survey, who spoke on "Recent Investigations by the Geological Survey of Alaska's Petroleum Possibilities," said that as a result of studies undertaken in five widely-separated localities during the last two years, the Gulf of Alaska area, the Alaska Peninsula-Cook Inlet area and northern Alaska appear to be of the most immediate significance. Reed declared the oil possibilities in the Gulf of Alaska area are confined to rocks of tertiary age. Farther west in the Alaska Peninsula-Cook Inlet region, Jurassic rocks overlie a Triassic limestone that is presumed to be a possible oil source. In north Alaska, the Navy is exploring oil possibilities of Naval Petroleum Reserve No. 4 that lies in an extensive tract underlain for the most part by gently-folded Cretaceous rocks.

The Pacific Coast District Society of Exploration Geophysicists held a one day meeting November 7 before the opening of the AAPG program with Jakosky and C. H. Dresbach presiding. The Pacific Section of the Society of Economic Paleontologists also held its annual meeting in conjunction with the AAPG, Stanley S. Siegfus, president of the section, acting as chairman.

Porter Howard Back On Job As Sun's Traffic Manager

Porter L. Howard has returned from government service to his job as general traffic manager of Sun Oil Company, but remains on call to advice Col. J. Monroe Johnson, Director of the Office of Defense Transportation, on special problems. One such problem recently was the oil strike, which brought Howard back to Washington for a two-week session shortly after his resignation became effective.



Porter L. Howard

It was the third time he had left and then returned again to ODT. Starting with the Office in February, 1943, as a consultant, he served without pay both in that capacity and as assistant deputy director of the Petroleum and Other Liquid Transport Department until October, 1944, when he resigned because of pressing transportation problems of his own company. However, within a few months the big German counter-offensive broke through in the Ardennes Forest, and he was back in Washington, coordinating the flow of oil. Two months later he became Director of the Liquid Transport Department in Washington.

Active in the transportation and petroleum industries since 1905, Howard was described by Colonel Johnson as "one of the few transportation men in the oil industry who have had practical experience with all of the forms of petroleum transportation—movements by pipe line, rail, truck and water."

Wallace's Expansion Plan Outlined to Associations

Representatives of 29 trade associations, including the Texas Mid-Continent Oil and Gas Association, met last week with Secretary Henry Wallace to learn of his program for expanding the services rendered business by the Department of Commerce.

Wallace outlined the improvements in organization and operation which he hopes for.

O'Mahoney Committee Hearings on War Emergency Lines Scheduled

The Special Senate Petroleum Investigating Committee will get into the most controversial of all current reconversion problems this week—the disposition to be made of the war-built oil facilities and primarily the Big Inch and Little Big Inch Pipe Lines.

Hearings on the subject will open November 15, immediately following the American Petroleum Institute meeting, and a number of oil leaders will go from Chicago direct to Washington to participate in the industry's presentation.

The study is expected to be given a firm basis by a report from the Attorney General in which the suggestions of the Department of Justice for postwar use will be revealed. It is generally expected that the department will propose that one of the Big Inch lines be acquired by interests outside the oil industry for use as a common carrier for oil, for the benefit of independent operators.

It is also expected that the suggestion for use of one of the lines as a natural gas carrier will be revived. Fears that the Big Inch line would be converted to gas were expressed when its construction was under consideration, by Senator W. Lee O'Daniel of Texas and others representing that state and Louisiana, which were opposed to large-scale export of their natural gas.

The committee will also go into the question of disposal of the government-owned tankers and 100-octane plants.

Preliminary studies indicated that the most general suggestion is that the tankers be sold to private buyers, with first preference going either to independents or to companies now operating them; there is general agreement, however, that as many as possible should be retained under the United States flag and that domestic interests should be permitted to purchase all the vessels they need or desire before any are offered to foreign buyers.

With respect to the 100-octane plants, it was suggested that the holders of options should be given an opportunity to exercise their rights, but where no options exist or are exercised, independents should be allowed a priority to purchase, on the ground that the larger integrated companies already have an advantage. However, it was contended that no company should be allowed to buy at such a low price that it would be placed in a better position to compete with other companies which had greater capital invested in refinery facilities, and one association urged that no facilities be sold to cooperatives or other purchasers who operate under special tax exemptions.

War Emergency Tankers Approval Is Withdrawn

The War Production Board has withdrawn its certificate of October 7, 1943, approving a plan of the War Shipping Administration for operation of tankers owned by the federal government by War Emergency Tankers, Inc.

The corporation was organized at the request of WSA by The Texas Company, Standard Oil Company (New Jersey), Socony Vacuum Oil Company, Sun Oil Company, The Atlantic Refining Company, Sinclair Refining Company, Pan American Petroleum and Transport Company and Tide Water Associated Oil Company.

The arrangement provided that the tankers would be operated by the corporation as a general agent for the United States, and agreements between War Emergency Tankers and its stockholders covering the operation of the vessels by the latter as principle subagents.

Geological Survey Map Shows Rangely Anticline

A new map of the Rangely Oil Field in Colorado, showing the structure of the Rangely anticline by contours drawn on the top of the deep producing zone in the Weber sandstone, is now available, the United States Geological Survey has announced.

Twelve producing wells have been drilled into the Weber sandstone since September, 1943, discovering substantial new reserves of oil which has led to the construction of a pipe line to the field, and much additional drilling is contemplated over an area of 21 square miles that is favorable for prospecting.

The potentialities of the field as then known were covered in June, 1944, on a USGS map, which now has been brought up to date. Copies of the map, issued as Preliminary Map 41 of the Oil and Gas Investigations series, will be available at 40 cents each from USGS offices in Washington, Denver, Tulsa and Casper, Wyoming.

Air Commander Tells How Bombing Of Oil Plants Will Defeat Enemy

Destruction of a single industry—oil—is sufficient alone to defeat any enemy under the conditions of modern warfare, it was disclosed November 11 by General H. H. Arnold, commander of the Army Air Forces, in a report to the Secretary of War.

Summarizing the activities and results of the air effort in both Europe and the Far East, General Arnold revealed that prior to the cessation of hosilities, Japanese home islands rates of production of petroleum products had been reduced to 65 percent of requirements at the July, 1945, monthly rate of consumption. (Due to the fact that the Japanese were using planes only sparingly at that time, had few oil-burning vessels afloat and were undertaking little or no army movements, their July consumption was at a very low level.)

"The synthetic oil industry was a material sufferer—it has been estimated that air attacks in 1945 against synthetic oil plants cost Japan thousands of barrels of petroleum products," General Arnold declared. "By the end of hostilities, air attack had at least temporarily put out of operation 100 percent of Japan's high grade lubricating oil capacity. Tetraethyl lead production was down to 28 percent of capacity. While the Japanese had a considerable surplus of refining capacity at the end of the war, B-29 attacks during 1945 against 11 of the largest and most modern refineries in the home islands had, nevertheless, rendered these refineries useless. Likewise, although Japan's inability to ship oil from the southern areas had given her a large excess of oil storage capacity, that capacity had been reduced by nearly 6 million barrels by air attack."

General Arnold outlined the strategic theory, upon which were based the major air operations during the war, as postulating that air attack on internal enemy vitals can so deplete specific industrial and economic resources, and on occasion the will to resist, as to make continued resistance by the enemy impossible.

"To accomplish the strategic purpose," he explained, "it is necessary to destroy only a small proportion of industry, probably not more than a fraction of the total required to conduct modern warfare on a large scale. Indiscriminately widespread destruction of enemy industry is simply a waste of effort.

"The real effect of our strategic air assaults, unlike that of tactical air attacks, was seldom immediately apparent. Its effect was more like that of cancer, producing internal decay, ultimately resulting in death."

FPC Shifts Texas Hearing to Houston

The FPC has cancelled the natural gas investigation hearings scheduled to open at Dallas December 10 and announced that they will be shifted to Houston and will open January 28.

The change was made in response to a request of the Texas Railroad Commission and the Governor's Steering Committee for a further postponement of the Texas hearings.

Attorney General Expects to File Against Other States for Tidelands

A favorable decision by the Supreme Court in the submerged suit brought against the state of California by the Department of Justice will be followed by similar suits against other coastal states, including Texas and Louisiana, it was indicated last week by Attorney General Tom C. Clark.

Clark disclosed that the Lands Division has been checking into the question whether other states should be brought into the litigation and decided against it last summer, but attorneys are still prosecuting their studies.

He explained that because of the varying treaties and arrangements whereby the several states entered the Union, the problem differs with every state and it probably will be necessary to bring suit separately against each state which has submerged lands to which the federal government claims title.

Clark specifically named Texas, Louisiana and Florida, the two former with known submerged oil reserves, as presenting problems arising out of the treaties for their admission to the Union.

The Attorney General also revealed that the Anti-trust Division will follow carefully the disposals of government-owned oil and other facilities built during the war "so that they will not cause any further concentration of economic power."

He also announced that hereafter all anti-trust investigations would be conducted by a special unit which is to be set up in the Federal Bureau of Investigation, rather than by attorneys of the Anti-trust Division who, he said, should devote themselves to court work and not to acting as investigators or witnesses.

THE OIL MAN'S CALENDAR

NOV. 12	FPC Gas Hearings, Room 245 Post Office Building, New Orleans.
12–15	American Petroleum Institute, Silver Jubilee Meeting, Stevens Hotel, Chicago.
DEC. 7– 8	Rocky Mountain Oil and Gas Association, Townsend Hotel, Casper, Wyoming.
10	Independent Natural Gas Association, Annual Meeting, Dallas.
13–15	Interstate Oil Compact Commission, Wichita, Kansas.
JAN. 28	FPC Gas Hearings, Houston.
FEB. 11	FPC Gas Hearings, Biloxi, Mississippi.
19	FPC Gas Hearings, Chicago.
MAR. 19	FPC Gas Hearings, Charleston, W. Va.
21–22	Southern Gas Association, Galveston.
APRIL 1– 2	Society of Exploration Geophysicists, Annual Meeting, Chicago, Stevens Hotel.
2– 4	American Association Petroleum Geologists, Annual Meeting, Chicago, Stevens Hotel.
17–19	Natural Gasoline Association of America, Annual Convention, Dallas, Baker Hotel.
MAY 7– 9	National Association Corrosion Engineers, Kansas City, Missouri, President Hotel.
16–18	National Oil Scouts and Landmen's Association, Annual Convention, Jackson, Mississippi, Hotel Heidelberg.

Tidelands Bill Hearing Delayed Until Next Year

Senate Judiciary Committee hearings on the House-approved bill relinquishing federal claim to tidelands oil deposits, originally set for next month, have been postponed until next year and may not be held before the Supreme Court acts in the suit brought by the Department of Justice against the State of California.

IPAA Counsel Criticizes Ickes for Oil Statements

Revival of the New Deal theory of scarcity was seen last week by the Independent Petroleum Association of America in Secretary Ickes' recent statement on the possibilities of large oil reserves in the continental shelf (THE OIL WEEKLY, November 5).

Throughout that statement, it was declared by Russell Brown, general counsel of the IPAA, the impression is given that the country is running out of oil.

Brown referred specifically to Ickes' "clairvoyance" in asserting that "history will record that the assertion of the jurisdiction of the United States over the natural resources of this area (continental shelf) as one of the nation's great advances."

"It could be, of course, that history will record that nothing very remarkable resulted from the assertion of jurisdiction," Brown commented. "No claim has ben made, with any scientific support, that the mere fact of submergence has brought any greater concentration of petroleum than has been found on land. The assertion of jurisdiction does not concentrate the oil."

Brown also cited other statements by Ickes which he said also convey the impression that the sands of the domestic petroleum industry are running out.

Petroleum Export Licenses To Be Valid for One Year

The Department of Commerce office of international trade operations, which took over administration of export controls when the Foreign Economic Administration was liquidated, has announced that, effective immediately, export, licenses covering shipments of petroleum products to all destinations will be valid for a period of one year from date of issuance.

Distribution Started of Enemy Industry Reports

The Department of Commerce last week began the distribution of reports on German plants and processes for the production of oil products investigated by the combined intelligence objectives sub-committee composed of British and American technologists.

The first group of reports released covered the lubricating oil plant at Porta, Germany; synthetic oil plants in the Ruhr; The I. G. Farbenindustrie plant at Heidelberg, where a number of products were made from bituminous coal, and the French shale industry.

Three of the French oil shale plants were visited, at one of which a yield of substantially 132 pounds of oil per short ton of shale had been developed.

The study was made by William W. Odell of the Bureau of Mines and Emile L. Baldeschwieler of PAW.

The French Government, it was explained, is exerting efforts to develop the known deposits of shale, because that country does not have a natural ready source of supply of petroleum.

The team which visited the I. G. plant learned that Japanese hydrogenation plants, operating on coal tar at 300 atmospheres, were located at Kinsei, Mukden and Hokkaido. The plants were reported to have a capacity of 50,000 tons annually, but it was not developed whether that was of total product or gasoline alone. A new coal tar hydrogenation plant was under construction at Utibuti with a capacity of 70,000 to 100,000 tons a year of gasoline, and at Fushon, shale oil plants with a capacity of 300,000 tons of shale oil a year were under construction. Crude rubber was reported to be a source of aviation gasoline in Japan.

Plan to Abandon Subsidy For Strippers Undeveloped

Fate of the stripper well subsidy is still uncertain, with officials of the Office of War Mobilization and the Office of Price Administration unable so far to develop a plan which will permit abandonment of federal payments without jeopardizing the thousands of small producing wells now kept alive only through the subsidy premiums.

The Office of War Mobilization has taken the position that there is no legal doubt concerning the authority to continue subsidy payments during the reconversion period, but has adopted a policy of discontinuing subsidy payments at the earliest practicable date.

Industry interests have made representations for continuance of the subsidy so long as price ceiling remain in effect, and have recommended that an increase be made in price ceilings equal to the amount of subsidy reduction if and when any revision is made of subsidy payments; that 90 days notice be given of any change in subsidy payments, and that adjustments in price ceiling and subsidy be made concurrently.

Reverse of War Process Will Bring Nation Back to Natural Rubber Use

Reconversion of the American rubber industry to natural crude rubber will be accomplished by reversing the route by which it was converted to the use of synthetic, Robert S. Wilson, vice president of Goodyear Tire and Rubber Company, said in his final report as director of rubber programs for the defunct War Production Board.

In the wartime conversion of the industry, synthetic rubber was used first and in the greatest quantities in those products where the end product quality was adequate when made of synthetic, Wilson explained. In reconverting, the initial supplies of natural rubber will go to those products where it is required for quality reasons, with truck tires among the first.

Rubber consumption, natural and synthetic, this year will amount to approximately 850,000 long tons, the result of a steady upward climb since 1942, when it was cut from approximately 775,000 to something under 400,000 tons.

The consumption of natural rubber this year, however, will be less than 115,000 tons, or about the amount used in 1916.

Production schedule for 1946 calls for 13,770,000 truck and bus tires against an estimated 16,600,000 this year; 66,060,000 passengar car tires against 28,200,000; 3,800,000 tractor and implement tires against 2,600,000; and 182,000 airplane tires against 800,000.

In 1941, he said, America's rubber products were made of 99 percent natural rubber and 1 percent synthetic. This year, they are being made of 15 percent natural and 85 percent synthetic.

"In the third year after the loss of Singapore, our total rubber consumption (natural and synthetic) rose to a peak higher than in any previous year in our history," Wilson added. "While the synthetic rubber polymer is not in all respects the equal of natural rubber as yet, it did the job and did it well.

"Broadly speaking, no vehicle, military or essential civilian, stood still for lack of tires and no military operation was delayed because rubber equipment was lacking."

International Rubber Parley Scheduled Soon

The international rubber group which is studying the postwar situation will meet in London November 20, the Department of State announced last week.

Donald D. Kennedy, chief of the department's international resources division, will be United States representative, and will be accompanied by members of the rubber advisory panel, including P. W. Litchfield, chairman of the board of Goodyear Tire and Rubber Company; John L. Collyre, president of The B. F. Goodrich Company; Harvey S. Firestone, Jr., president of the Firestone Tire and Rubber Company; H. Stuart Hotchkiss, chairman of the board of the Cambridge Rubber Company; N. L. Viles, president of the Rubber Manufacturers Association; George M. Tisdale, director of the Rubber Bureau; Allan Grant, president of the Rubber Development Corporation, and George White, Jr., director of Rubber Reserve.

Foreign Trade Improvement Being Studied in Capital

Methods for streamlining the foreign trade promotion service of the State Department to meet postwar conditions were discussed last week at a meeting of the advisory committee on the commercial activities of the foreign service, recently created by the secretaries of State and Commerce.

The committee will formulate recommendations regarding commercial and other economic reporting of the foreign service for the use of American business interests, and will suggest regulations and instructions for improvement. It also will consider the appropriate channels for the dissemination to business of the information received from abroad.

Crude Oil Production in the United States

(Estimates compiled by The OIL WEEKLY. All figures indicate daily averages, in barrels.)

STATE OR DISTRICT	PRODUCTION IN WEEK ENDED Nov. 10	Nov. 3
Alabama	150	100
Arkansas	75,100	75,200
California	832,400	835,300
Colorado	20,200	18,900
Florida	100	150
Illinois	206,300	204,600
Indiana	13,500	13,800
Kansas	243,800	241,850
Kentucky	29,650	29,850
Louisiana	367,100	356,700
North Louisiana	73,500	68,100
South Louisiana	293,600	288,600
Michigan	45,900	44,550
Mississippi	53,500	53,850
Missouri	100	100
Montana	19,750	20,350
Nebraska	800	800
New Mexico	94,200	94,200
New York	13,950	13,200
Ohio	7,600	6,850
Oklahoma	390,150	362,800
Pennsylvania	37,150	34,650
Tennessee	35	35
Texas	1,892,950	1,791,225
Upper Gulf Coast	464,350	429,950
East Texas Field	316,000	308,000
Rest of Eastern Texas	127,500	122,500
Southwest Texas	300,250	282,825
West Texas	456,650	423,150
North Texas	147,250	139,800
Panhandle	80,950	85,000
West Virginia	7,600	8,150
Wyoming	97,100	102,050
Total United States	4,449,085	4,309,260

Drilling Mud Patent Suit Is Being Heard in Houston

A patent infringement suit affecting oil drilling operations is being heard in Federal District court in Houston.

The suit in which Truman B. Wayne, Houston inventor and patent holder, Visco Products Company and National Lead Company, are plaintiffs, alleges that The Texas Company and Humble Oil & Refining Company, defendants, have infringed plantiffs' patents in the use of phosphates for controlling the density or viscosity of drilling muds.

National Lead Company was brought into the suit because the Baroid Sales Division of that firm has the right to issue licenses under the Wayne patent.

Drilling Equipment Is Offered in Surplus Sale

Unused government-owned surplus petroleum refining equipment and used drilling equipment, with spare parts, were offered for sale by the Reconstruction Finance Corporation last week. Sealed bids on the equipment will be received by the Los Angeles RFC office up to November 30.

Included in the refining equipment, which is all new, are a distillation unit of 4600 barrels daily capacity of paraffin type crude; a crude fuel flash unit, 11,000 barrel daily capacity of heavy asphaltic type crude; a naphtha reformer unit, 1600 barrel daily capacity, together with transfer piping, blending and leading equipment, two control laboratories, construction tools, machine shop and pipe shop with power plant and buildings, and an oil-field warehouse stock. In addition there are 34 unused welded steel tanks of capacities ranging from 1500 to 10,000 barrels, and an unused drum plant.

Drilling equipment includes one used National Ideal No. 125 special drilling rig with spare parts complete, less derrick, and spare parts and replacements for six National Ideal No. 50 drilling rigs.

Houston Nomads Induct Five New Members

Five new members were inducted into the organization at the November meeting of Houston Nomads Monday evening. The five were R. R. (Dick) Bloss of Ideco at Beaumont; A. G. Chandler of Reed Roller Bit Company, Houston; S. T. Dyer of Reed Roller Bit Company, Houston; J. V. (Doc) Pennington, McEvoy Company, Houston; and W. J. Sutton of Wilson Foundry and Machine Company, Houston.

Honored guests of the evening included a number of visiting Nomads and oil men and the following visitors from outside the United States: C. W. Saville of The Texas Company, Bogota, Colombia; E. F. Hulsman, Shell Oil Company, Casaba, Colombia; E. R. Peters of YPF, Argentina; Walter T. Wells, of Creole Petroleum, Jusepin, Venezuela, and Mario J. Cueto of Reed Roller Bit Company, Argentina.

Says Present Language of Oil Pact Approved by Industry's Consultants

By GEORGE A. HILL, JR.
Oil Industry Consultant to U. S. Delegates Negotiating Anglo-American Oil Agreement

EDITOR'S NOTE: Because George A. Hill, Jr., president of Houston Oil Company, was one of the most outspoken opponents of the original Anglo-American oil agreement offered to the United States Senate in the fall of 1944 and because he was one of the oil industry consultants to the American delegates appointed to negotiate a revised agreement which would meet with the approval of the American oil industry, *The Oil Weekly*, when various statements began appearing against the new agreement, asked Mr. Hill to make a statement in detail on the proposed new pact. This has been done and is presented herewith.

THE Anglo-American oil treaty, in the precise form transmitted to the Senate by the President for its advice and consent, is the text approved by the American delegation and the industry consultants who attended the London conference. The text released by the Petroleum Administration for War erroneously misstated the word "all" for the word "those" in one place in the treaty, which will be indicated in the below-quoted and relevant portions of such treaty:

"In relation to the government of the United Kingdom of Great Britain and Northern Ireland, the United Kingdom, those British colonies, overseas territories, protectorates, protected states, and all mandated territories administered by that government.

"In relation to the government of the United States of America, the continental United States and all territory under the jurisdiction of the United States, lists of which as of the date of this agreement, have been exchanged."

Erroneous statements have been made with reference to this matter in a number of particulars, which, I believe, I am in a position to authentically correct:

First: The treaty, as approved by the consultants, used the word "those" in the context as above set forth, and was not changed after submission to the consultants, or after signature by the representatives of the two governments.

Second: The word "those" was used intentionally and advisedly and for the precise purpose of committing the British government by a list of the constituent parts of the United Kingdom.

This was of importance for several reasons:

American Viewpoint

First: The American oil industry, and the American delegation, and the industry consultants were a unit in insisting upon inclusion of subdivision (a) of Article 7 in the treaty as follows:

"That the general purpose of this agreement is to facilitate the orderly development of the international petroleum trade, and that no provision in this agreement, with the exception of Article 2, is to be construed as applying to the operation of the domestic petroleum industry within the country of either government."

The purpose of this article was to make clear that the International Petroleum Commission, even in its purely advisory recommendations, would have no application *"to the operation of the domestic petroleum industry within the country of either government."*

This provision, therefore, was designed to define what constitutes oil in international trade, and to define what oil was within the *domestic petroleum industry* of each country signatory to the agreement. The United States was conspicuously *advantaged by this provision* inasmuch as oil operations in the United States and its territories are very large, and oil operations in the United Kingdom (as described in the list filed in the State Department) are relatively unimportant.

Second: Article 2 of the treaty as above indicated in subdivision (a) of Article 7, is as follows:

"Article 2: In furtherance of the purposes of this agreement, the signatory governments will so direct their efforts:

"a. That all valid concession contracts and lawfully acquired rights shall be respected and that there shall be no interference directly or indirectly with such contracts or rights.

"b. That with regard to the acquisition of exploration and development rights the principle of equal opportunity shall be respected.

"c. That the exploration for and development of petroleum resources, the construction and operation of refineries and other facilities, and the distribution of petroleum shall not be hampered by restrictions inconsistent with the purposes of this agreement."

Rights Guaranteed

The meaning of this article is that respect for, and noninterference with, valid concession contracts and the principle of equal commercial opportunity, and noninterference with oil explorations and operations shall be guaranteed by both countries, both within such countries and throughout the world. The failure to have a treaty containing these obligations has been the cause of previous friction between the two countries and their nationals in the Middle East.

I was one of the ten advisers to the State Department when the original treaty was negotiated, and filed specific objections thereto, not only during the course of its negotiation, but after its was submitted to the Senate of the United States by President Roosevelt for ratification. I approved in the original treaty substantially the same provisions as are set forth in Article 2, above quoted, and also did the entire oil industry, in my opinon, but I objected to other provisions of said treaty, and filed such objections with the Petroleum Industry War Council on September 13, 1944. Such objection were chiefly summarized in a resolution which I prepared, and which was adopted by the oil operators of Texas and countless other oil and gas trade association, chambers of commerce, civic bodies, etc., which nine points of objection were as follows:

Nine Objections

"To the use of the treaty-making device inherent in the Anglo-American Petroleum Agreement to vest in the Congress, or the Executive Department of the United States Government, or an International Oil Commission, powers in time of peace not now vested in the Federal Government under our Constitution,

"(a) to fix production quotas in the oil producing areas of the world, including the United States, and the several oil producing States; and

"(b) to make market allocations throughout the world; and

"(c) to fix prices of oil and its products, or price ceilings, or what may be deemed 'fair prices'; and

"(d) to take jurisdiction over conservation regulations by making determinations of 'sound engineering practices' to be effectuated by Federal law or international agreement; and

"(e) to regulate our domestic oil business in relation to the economic advancement of foreign oil consuming or foreign oil producing countries; and

"(f) to surrender the control of import regulation and duties on foreign oil importations while the United Kingdom preserves 'imperial preferences'; and

"(g) to vest in an international oil commission the determination of 'peaceable' and 'non-peaceable' countries as the basis for eligibility or banishment from international trade in oil, irrespective of whether our nation is otherwise on friendly terms and enjoys amicable relations with such nations; and

"(h) to regulate 'the production, processing, transportation, and distribution of petroleum' in the United States (except as to the now-recognized constitutional regulation of transportation in interstate and foreign commerce); and

"(i) to legalize cartels;"

Such objections prevailed and the President of the United States withdrew the original treaty from the consideration of the Senate.

Drawn With Care

The new treaty that has been negotiated was drawn with scrupulous care to meet and obviate every objection recorded to the original treaty. The International Oil Commission has no power whatsoever to make enforceable recommendations or when approved by either or both of said governments, to enforce any recommendations which are purely and strictly *advisory only;* and, furthermore, the American delegation, in response to United industry opinion, inserted in said Treaty Subdivision (b) of Article 6, as follows:

"That no provision in this agreement shall be construed to require either government to act upon any report or proposal made by the commission, or to require the nationals of either government to comply with any report or proposal made by the commission, whether or not the report or proposal is approved by that government."

"Change" in Anglo-American Oil Pact Text Made During London Conference

Assurance that the Anglo-American petroleum agreement as submitted to the Senate for ratification meets all desires of the industry was given this week by State Department officials, who explained that substitution of a specific list of British areas to which it will apply for the original designation of "all British colonies" was made during the London conferences at the suggestion of oil men and is equally all-inclusive.

What happened was this: While the commission negotiating the agreement was studying the situation more than one draft was made, among them the one using the word "all," about which the confusion has arisen. But, in the final and official draft—the one now before the U. S. Senate—the change was made.

Both George A. Hill, Jr., and A. Jacobsen, executives of independent oil companies, both of whom opposed the treaty when it was offered a year ago, say that the Senate draft is the one they approved in London and assert that they approved the elimination of the word "all" and the substitution of the later language because they felt it improved the position of the American oil companies. However, Washington, in making public the text late in September, released a preliminary instead of the final draft.

This seems to settle the question which was agitating some circles last week: "Who changed the draft?" Nobody changed it. The OIL WEEKLY and others of the press were simply given the wrong draft.

The specific listing, it was said, covers all territory under the British flag, and there were indications that the American delegation which negotiated the agreement in London would have been satisfied with a far less extensive list since the designation of either all British colonies or the list actually appended to the pact serves to limit international trade.

It was explained that Britain produces oil in only two areas under the British flag, Trinidad and British North Borneo, and shipments to all other British colonies are considered in domestic trade under the agreement, whereas a more limited list would have put omitted colonies into the international category.

The point was made to emphasize the fact that the specific list in the agreement is as all-embracing as the original designation of all colonies.

Two Texas officials last week attacked the new Anglo-American oil agreement. Railroad Commission Chairman Olin Culberson and State Land Commissioner Bascom Giles both charged it threatened United States solvency. Culberson, in a prepared statement, thought the change of one word was ruinous.

Co-ops to Oppose

Opposition to be offered ratification of the agreement when hearings are held by the Senate Foreign Relations Committee will come from the international co-operative association, which has plans for operations abroad.

The association has charged that the pact freezes the situation in the Middle East and closes the door to co-operatives to acquire any rights, but it has been asserted by Secretary of the Interior Ickes that such is not the case, and the co-operatives have equal freedom with

---

The new treaty, therefore, does not in any way "vest in the Congress of the United States or the Executive Department of the United States or an international oil commission, power to fix production quotas, to make market allocations, to fix prices, to take jurisdiction over conservation, to regulate the domestic oil business, to take control of import regulations, to determine the peaceable or non-peaceable status of foreign countries, to regulate production, processing, transportation or distribution of petroleum in the United States or elsewhere, or to legalize cartels."

It has been asserted that, in connection with the list of areas filed by the United Kingdom with our State Department, describing its constituent parts, that "this list does not include Burma, one of the richest future sources of British oil" and that: if this is correct, then, while the United States is throwing all of its oil fields into the cartel pot, Britain has slipped one of her best ones out—by a mysterious change in the treaty wording." This, of course, is a doubly erroneous statement:

No Cartel Provision

1. There is no cartel pot in the treaty.
2. The United States expressly exempts from the operations of the treaty, *all domestic oil operations.*
3. The *exclusion* of Burma from the list is what subjects present and future Burmese production to the advisory recommendations of the International Oil Commission.
4. In like fashion the *exclusion* from the list of Kuwait and Bahrein Island has the same effect with respect to each of these areas as to Burma.
5. The United Kingdom is bound to recognize equal commercial opportunity, respect for American concessions, exploration, rights, etc., within such areas, under the provisions of Article 2, as within the areas embraced in the United Kingdom as detailed in the list filed by the State Department.

Someone has asserted that, because there is *certain* similar laguage in the preamble of the new and revised treaty to that contained in the original and objectionable treaty, that the two treaties have the same force and effect. This is an obviously unsound conclusion, and is due to a lack of legal comprehension of both the language employed and the legal effect thereof in the two instruments.

There was eliminated from the preamble of the new treaty the provisions of Section 3 of the preamble of the original treaty, providing for "due consideration of such factors as available reserves, sound engineering practices, and relevant economic factors" which, in the original treaty, were to be used as factors upon which to predicate quotas and allocations.

Further Eliminations

There has been eliminated from the preamble all reference to Section 4 of the preamble of the original treaty providing that "such supplies should be available in accordance with the principles of the Atlantic Charter" for the many reasons pointed out in the original objections filed by me with the Petroleum Industry War Council, and the State Department, which included the objection that Winston Churchill had reserved the right to have "imperial preference" unaffected by the provisions of the Atlantic Charter.

There was eliminated from the new treaty the provisions in the original treaty "that upon approval of the recommendations of the commission they will endeavor, in accordance with their respective constitutional procedures, to give effect to such approved recommendations" and, as previously pointed out, the American delegation and industry consultants inserted in the treaty the provisions of Subdivision (b) of Article 6, assuring that the recommendations were advisory only, and that American citizens could not be required to comply therewith even though approved by the American government.

There was eliminated from the new treaty the provisions of Subdivision 4 of Article IV of the original treaty, and Subdivision 3 and 4 of Article III of the original treaty, and as previously stated, *no power whatsoever* was granted to the International Oil Commission to do other than make studies and recommendations, except to make studies and recommendations in the same advisory way that is followed by the Interstate Oil Compact Commission, in relation to the domestic oil business in the United States.

The industry consultants who accompanied the American delegation to the London conference were free agents; paid their own expenses to and from the London conference, and reserved unto themselves and each of them a free and unrestricted right to object to any article, sentence, or word contained in the proposed treaty, throughout the negotiation thereof, and the treaty as finally signed, happily met with the entire concurrence of each of them.

Not only the new treaty, but the original treaty, and its antecedent, by related projects, the Petroleum Reserves Corporation, and the Saudi Arabian Pipe Line, have received in the past my most painstaking consideration, and I can assert confidently that the new treaty has been drafted and signed, in form and text, to meet each and all of the objections that I have addressed thereto over the past 18 months.

the companies to acquire such rights. Ickes pointed out that the agreement is so broad that it would be possible for a company holding rights abroad to sell them to a co-operative without endangering the validity of the concession.

The idea of the world co-operative was recently explained by Howard Cowden, co-operative leader, who pointed out that in this country nine regional co-operatives own eleven gasoline refineries consuming 60,000 barrels of crude and producing 2 million gallons of refined fuels daily, together with over 400 oil wells, 1100 miles of pipe line and a far-flung retail distribution system, which makes them the nation's largest independent refiners.

The proposed International Co-operative Petroleum Association, Cowden said, would eventually operate its own oil fields, refineries and tankers, and sell oil on a non-profit basis to members of consumer co-operatives throughout the world. It would be owned by co-operatives of many countries, and is designed to give consumers, particularly those in Europe, "some relief from the exclusive control of the oil business by international cartels and monopolies."

"I feel that it's not safe to leave the most important commodity in war and peace—the most explosive commodity in international commerce—in the hands of private international cartels," Cowden declared in a recent radio address. "Co-operatives are the positive approach to checkmating practices of cartels.

List of Areas in Pact

The list of United States and British areas covered by the agreement, as given in the copy sent to the Senate, is as follows:

List of territories to which the agreement applies:

1. Of the United States: Alaska, Hawaii, Puerto Rico, Virgin Islands, Panama Canal Zone.

2. Of the United Kingdom: The United Kingdom, Aden, Bahamas, Barbados, Basutoland, Bechuanaland Protectorate, Bermuda, British Guiana, British Honduras, British Solomon Islands Protectorate, Cyprus, Ceylon, Falkland Islands and Dependencies, Fiji, Gambia (Colony and Protectorate), Gibraltar, Gilbert and Ellice Islands Colony, Gold Coast (a) Colony, (b) Ashanti, (c) Northern Territories, (d) Togoland under British Mandate; Hong Kong, Jamaica (including Turks and Caicos Islands and the Cayman Islands), Kenya (Colony and Protectorate).

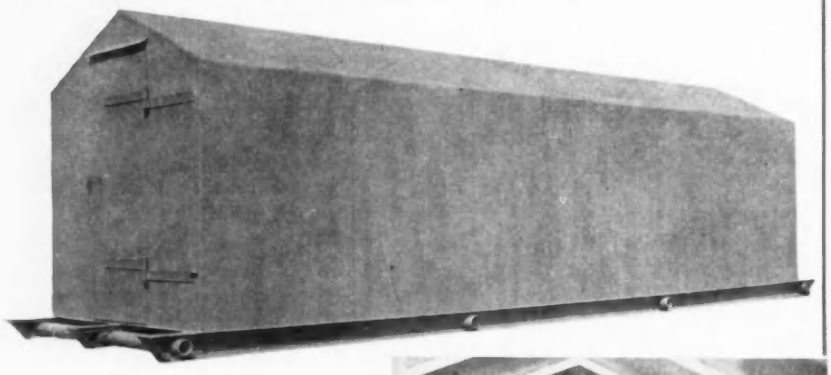
Leeward Islands—Antigua, Montserrat, St. Christopher and Nevis; Malay States—(a) Federated Malay States—Negri Sembilan, Pahang, Perak, Selangor, (b) Unfederated Malay States—Johore, Kedah, Kelantan, Perlis, Trengganu; and Brunei, Malta, Mauritius, New Hebrides; Nigeria O (a) Colony, (b) Protectorate, (c) Cameroons under British Mandate; North Borneo, State of; Northern Rhodesia, Nyasaland Protectorate, Palestine (excluding Transjordan), St. Helena and Dependencies, Sarawak, Seychelles, Sierra Leone (Colony and Protectorate), Somaliland Protectorate, Straits Settlements, Swaziland, Tanganyika Territory, Tonga, Transjordan, Trinidad and Tobago, Uganda Protectorate, Virgin Islands, Windward Islands — Dominica, Grenada, St. Lucia, St. Vincent; Zanzibar Protectorate.

Oppose Oil Treaty

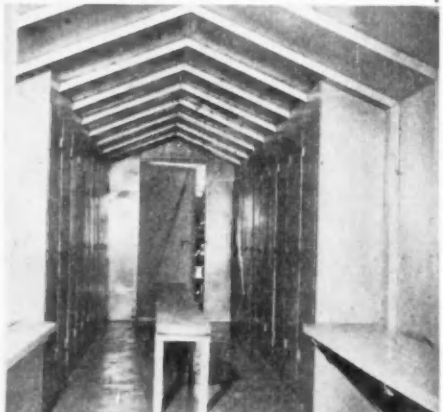
Opposition to the ratification by the United States of the proposed Anglo-American petroleum agreement has been voted by the Independent Petroleum Association of Texas.

"There is no real need for any such treaty," the Association said in telegrams to Senators Connally and O'Daniel of Texas. "It is a long step toward internationalism of the petroleum industry of America."

The group appointed a delegation headed by Association President D. Harold Byrd, to attend committee meetings and hearings concerning the treaty.



the Newest in
"CHANGE-LOCKER HOUSES"



Here's a house designed as operators and their men want it, incorporating features they, themselves, specified to increase its usefulness and convenience.

It has twenty, 14" by 18" individual lockers (10 on each side at one end of house), where workers can keep their clothes. In the center of the house, between the lockers, is a bench 15' long by 12" wide, of 2" timbers bolted to steel frame. Also two additional benches, 5' long on each side of the house at the end of the locker rows. The house has a built-in knowledge or driller's box of 10 gauge steel.

This all-steel, all-welded "Change-Locker" house is 24' long built on three 6" H beam steel skids, with a 1¾" x 1¾" x 3/16" bar angle frame. The walls and roof are 14 gauge sheet steel; the floor 3/16" steel plate. Doors are at each end; also entrances for electrical wiring. Each door is equipped with a tamper-proof lock.

This rigidly constructed house will give you long service on many jobs. It can be easily and conveniently moved on a truck-trailer from job to job. It is an economical, essential part of every drilling rig.

We will build any type house to your specifications.

General WELDING WORKS
Manufacturing & Fabricating Plate & Structural
1819 MILBY ST. HOUSTON, TEXAS

MANUFACTURERS and FABRICATORS
Tool Houses - Tool Boxes - Pressure Vesseles - Water Tanks - API-ASME Code Vessels - Storage Tanks - Stud Bolts - All Types Skids - Small Condensers Repaired

Refinery Runs Reduced but Additions Made to Stocks of Leading Products

Favorable trends of refinery production and stocks of principal products were indicated by figures on operations of the industry during the week ended November 3, as reported by the American Petroleum Institute.

Crude oil production increased somewhat because Texas increased allowables as of the beginning of the month. Refinery runs of crude were reduced moderately and consequently production of gasoline and distillate fuel oil decreased, but stocks of those products increased. Residual fuel production showed an increase and so did stocks of that product.

U. S. crude production of 4,318,000 barrels daily was 45,000 a day more than in the previous week, although 402,000 a day or 8.5 percent less than the 4,720,000 barrels per day produced in the corresponding week last year. Crude oil stocks totaled 224,230,000 barrels on October 27, the Bureau of Mines reported. They had decreased 2,167,000 barrels during the week. The new total was practically the same as the amount held one year previously.

Crude runs to stills at U. S. refineries averaged 4,807,000 barrels daily, down 31,000 from the previous week but 205,000 a day or 4.5 percent more than runs in the comparable week last year.

Production of gasoline totaled 15,234,000 barrels, or 296,000 less than output in the preceding week. The production was 963,000 barrels or 6.7 percent greater than that in the like week last year. Stocks of finished and unfinished gasoline increased by 2,086,000 barrels during the week, having risen to 76,421,000 barrels. That amount was 1,633,000 barrels or 2 percent less than the approximately 78 million barrels held November 4 last year. Stocks of civilian grade gasoline were increased 2,961,000 barrels during the week to 50,563,000 barrels, which compared with only 38,963,000 barrels held a year previously. Military and other stocks were reduced 875,000 barrels to 25,858,000, and that compared with 39,091,000 barrels a year before.

Distillate fuel oil production totaled 4,986,000 barrels during the week of November 3, a decrease of 173,000 barrels from the previous week although 428,000 barrels or 9.4 percent more than output in the corresponding week last year. Stocks were increased by 1,015,000 barrels, rising to 44,487,000 barrels. But that amount was 2,842,000 barrels or 6 percent less than the 47,329,000 barrels held a year previously.

Residual fuel oil production totaled 8,922,000 barrels, an increase of 231,000 over the previous week's output and 162,000 barrels or nearly 2 percent more than production in the like week last year. Stocks were increased 185,000 barrels to 46,128,000. That amount was about 17 million barrels or 27 percent less than the 63,526,000 barrels held a year previously.

Trends of Operations and Changes in Stocks

Figures on crude stocks are from Bureau of Mines weekly reports; all others from American Petroleum Institute weekly reports, which are estimates on Bureau of Mines basis.

(All figures in thousands of barrels—add 000)

HIGHS AND LOWS OF RECENT YEARS

ITEM	Crude Oil Prod. Barrels Daily	Crude Oil Prod. Week Ended	Runs to Stills Barrels Daily	Runs to Stills Week Ended	Crude Stocks Barrels	Crude Stocks Week Ended	Gasoline Stocks Barrels	Gasoline Stocks Week Ended	Gasoil and Distillate Stocks Barrels	Gasoil and Distillate Stocks Week Ended	Residual Fuel Oil Stocks Barrels	Residual Fuel Oil Stocks Week Ended
Highs:												
1941	4,337	11-22	4,120	10-18	266,187	3-29	99,727	3-29	[1]54,983	11-15	102,448	1- 4
1942	4,337	2- 7	3,961	1- 3	263,208	3-28	[1]109,281	3-14	47,861	11-14	95,857	1- 8
1943	4,436	11-13	4,331	12- 4	245,752	5-29	94,159	3-20	47,187	11-27	72,881	1- 2
1944	4,762	9-30	4,798	12-30	240,992	1- 1	89,162	4- 1	48,162	10-28	64,744	10- 7
1945	[1]4,944	7-14	[1]5,140	8-18	227,554	10-13	99,012	3-24	44,487	10- 3	56,074	1- 6
Lows:												
1939	[3]1,601	8-26	3,125	2-18	[2]229,127	10-12	71,152	10- 7	20,722	4-15	105,397	4- 3
1941	3,364	1-11	3,490	1-18	240,399	11-15	79,923	10- 4	28,382	4-12	90,914	7-13
1942	3,297	7- 4	3,393	5-23	231,896	12-12	75,934	12- 5	29,240	4-25	72,962	12-26
1943	3,821	1- 9	3,579	3-18	232,191	1- 9	68,182	10-16	30,732	4- 3	57,596	12-25
1944	4,357	1- 1	4,228	2-12	220,258	9- 9	76,302	1- 1	30,232	4-19	49,737	3-18
1945	3,621	10- 6	3,409	10- 6	211,813	8-25	70,791	10-13	26,483	3-17	38,548	5-26

TRENDS OF 1944 AND 1945

Trends in Week Ended:	Crude Oil Production Daily	Crude Oil Runs to Stills Daily	Crude Oil Stocks Week End	Gasoline Production Weekly	Gasoline Stocks Week End	Gasoil and Distillate Production Weekly	Gasoil and Distillate Stocks Week End	Residual Fuel Production Weekly	Residual Fuel Stocks Week End
1944:									
January 1	4,357	4,453	240,992	13,192	76,302	4,575	42,310	9,141	57,380
January 29	4,400	4,359	240,251	13,427	81,075	4,054	37,266	8,889	52,857
February 26	4,423	4,377	237,137	13,183	85,248	4,558	33,766	8,952	51,387
March 25	4,385	4,443	236,285	13,362	87,287	4,979	31,319	9,018	51,669
April 1	4,383	4,435	234,667	13,824	89,162	4,450	30,530	8,367	51,326
April 29	4,431	4,300	235,342	13,126	88,342	4,284	30,236	8,398	49,985
May 27	4,514	4,532	234,423	13,502	86,468	4,702	32,035	8,568	49,812
July 1	4,587	4,638	228,860	14,052	83,559	4,496	35,360	8,872	52,235
July 29	4,608	4,627	225,112	14,115	82,665	4,833	38,135	8,900	56,280
August 26	4,667	4,698	222,931	14,112	80,740	4,566	41,453	8,680	59,839
September 30	4,762	4,775	222,393	14,494	78,028	4,622	45,329	9,292	64,226
October 28	4,740	4,658	223,235	14,117	79,058	4,772	48,705	8,985	64,382
December 2	4,712	4,693	221,591	14,853	80,427	4,082	45,832	8,981	61,727
December 9	4,704	4,552	220,258	14,611	80,880	4,056	44,430	8,923	60,458
December 16	4,695	4,537	222,075	14,145	82,747	4,353	42,413	8,727	59,280
December 23	4,729	4,682	222,575	14,635	83,355	4,605	40,846	8,798	58,509
December 30	4,705	4,798	222,998	15,342	86,614	4,257	39,495	9,156	57,430
1945:									
January 27	4,727	4,756	221,310	14,957	88,223	4,843	33,561	9,252	51,119
February 24	4,777	4,803	219,351	15,500	95,972	4,958	28,753	9,084	46,713
March 31	4,781	4,677	223,782	14,644	98,758	4,548	26,889	9,184	41,745
April 28	4,805	4,780	223,474	14,633	94,068	4,636	28,273	9,379	39,813
May 26	4,887	4,950	222,831	15,194	89,121	4,667	29,184	9,670	38,548
June 2	4,859	4,804	224,079	15,317	88,696	4,857	29,819	9,437	39,022
June 9	4,853	4,827	221,552	15,256	87,896	4,842	30,339	9,382	38,996
June 16	4,888	[4]4,915	221,932	15,132	87,504	5,342	30,397	9,252	39,482
June 23	4,898	5,002	220,974	15,367	87,462	5,014	31,761	9,558	39,893
June 30	4,903	4,999	220,781	15,546	86,472	4,910	32,213	9,077	40,488
July 7	4,886	5,006	217,250	15,082	86,329	4,875	33,667	9,238	40,754
July 14	4,944	4,945	216,355	15,349	85,401	5,197	34,804	9,337	41,489
July 21	4,944	4,927	218,108	15,430	85,930	5,090	35,458	9,071	42,480
July 28	4,930	4,996	218,507	16,106	86,008	4,598	36,071	9,586	42,283
August 25	4,892	4,931	[4]211,813	15,986	84,693	4,960	39,782	9,356	46,201
September 29	4,357	3,812	222,387	11,913	79,552	3,940	43,689	7,047	46,853
October 6	3,621	3,409	224,573	10,612	74,608	3,517	42,348	6,435	46,059
October 13	3,780	3,609	227,554	11,242	70,791	4,113	41,960	7,004	45,453
October 20	4,237	4,635	226,397	14,016	71,185	4,633	42,875	8,516	45,808
October 27	4,273	4,838	224,230	15,530	74,335	5,159	43,472	8,691	45,943
November 3, 1945	**4,318**	**4,807**	.....	**15,234**	**76,421**	**4,986**	**44,487**	**8,922**	**46,128**
November 4, 1944	4,720	4,602	[5]223,235	14,271	78,054	4,558	47,329	8,760	63,526
Change:									
In week	+45	—31	—2,167	—296	+2,086	—173	+1,015	+231	+185
In year	—402	+205	+995	+963	—1,633	+428	—2,842	+162	—17,398
In year	—8.5%	+4.5%	+0.4%	+6.7%	—2.1%	+9.4%	—6.0%	+1.8%	—27.4%

[1] All time peak. [2] Lowest between January, 1922 and July 1, 1944. [3] Lowest since October, 1922, due to shutdown of six Mid-Continent states. [4] Lowest since December, 1921. [5] Stocks, October 28, 1944.

Scouts and Landmen Meet In Mississippi May 16-18

The 1946 Annual Meeting of the National Oil Scouts and Landmen's Association will be held May 16, 17 and 18 at the Hotel Heidelberg, Jackson, Mississippi. The site and date of the meeting were selected at a meeting of association delegates at Austin, Texas, November 3.

Jim Germer of Olney, Illinois, chief scout, Pure Oil Company, was appointed to represent the association at the American Petroleum Institute meeting in Chicago this week.

HECO
PIPE LINE
CLEANING MACHINES
AND PARTS
FOR SALE OR RENTAL
Houston Equipment Co.
2319 Keene St.
Phone Fairfax 2468
Houston 9, Texas

Why Use Tubing?
you can
PUMP MORE OIL
with
LAMTEX
Casing Pumps
For the whole story, illustrated, phone or write:
LAMTEX EQUIPMENT CORP.
2501 Virginia St. Fort Worth, Texas
Phone 2-6860

See LAMTEX, Composite Catalog, pages 1570-1571

Day or Night
Service
DRAGLINES
BULLDOZERS
WINCH TRACTORS
for
Road construction,
Slush Pits, Foundations
and other types of oil field work.
TOM HAFER COMPANY
6140 ALMEDA ROAD—HOUSTON
Phone J-24060, Night J-21422

Application to Build 214-Mile Gas Line to Los Angeles Is Made to FPC

A joint application for construction of a 214-mile, 26-inch natural gas pipe line from the Arizona-California line to Los Angeles has been filed with Federal Power Commission by Southern California Gas Company and Southern Counties Gas Company of California.

The line, which would connect at the state boundary with another pipe line which El Paso Natural Gas Company proposes to construct from the Hugoton and Panhandle gas fields in Texas and various fields in the Permian basin in Texas and New Mexico, would have a daily capacity of 175 million cubic feet during the first five years of operation. The line has an estimated cost of $12,140,000 and through the addition of compressor plant facilities costing $3 million could be increased in capacity to 305 million cubic feet daily during the succeeding 25 years. The companies explained that the project was necessitated by the fact that all of the oil and gas fields from which they are receiving their current supply are being rapidly depleted. Last winter they were not capable of producing amounts sufficient to meet the maximum days' requirements, necessitating curtailment of deliveries to industries and withdrawals of stored gas. It is proposed to begin construction not later than October 1 and complete the line by June 1, 1947. But the project is contingent upon approval of El Paso Natural Gas Company's application for construction of a 720-mile, 26-inch pipe line from near Jal, New Mexico, to the Arizona-California state line.

The commission on November 7 accepted new rate schedules filed by Panhandle Eastern Pipe Line Company reducing its interstate wholesale natural gas rate by $5,110,000 from their 1941 levels.

The company also will be required to refund more than $24 million to its customers representing the difference between the rates ordered by the commission in September, 1942, and those the company has continued to charge up to this time.

Col. Kinsolving Named Head Of Sun Pipe Line Operations

Col. William C. Kinsolving has been appointed Manager of all Sun Oil Company pipe line operations, J. Edgar Pew, vice president, announced. He will make his headquarters in Philadelphia. This appointment does not involve any changes in local management.

Col. W. C. Kinsolving

Formerly manager of Sun Pipe Line Company, Texas, Colonel Kinsolving was recently released by the Army, where he had charge of constructing the section of the India-Burma-China pipe line which runs from Calcutta up the Brahmaputra Valley and into Assam, on the India-Burma border.

Colonel Kinsolving was on leave from Sun as assistant director of transportation for the Petroleum Administration for War at the time he entered the Armed Forces. He played a prominent part in planning the Big Inch pipe line in 1943, and in the construction of the Sun-Susquehanna system in 1930-31 as well as other pipe lines in the Southwest.

Texas-New Mexico Company Plans Mile Extension Line

The Texas-New Mexico Pipe Line Company has authorized the construction of a one-mile, eight-inch extension from its Jal station in southeastern New Mexico to the Dollar Hide one-well pool, southwestern Andrews County, Texas. The line will operate by gravity, and the oil will be handled for the account of The Texas Company. Large diameter pipe will permit eventual extensions to other deep areas in Andrews County.

The company also is building 1⅞ miles of four-inch temporary line from The Atlantic Refining Company's dual-pay discovery for the Block 31 area of Crane County, to connect with its Wink-Crane trunk line system. The discovery will have an allowable of 180 barrels daily from the Devonian and 220 barrels daily from the Ellenburger, and this oil will be purchased by Sinclair Refining Company.

Bossier City to East Texas Line to Continue Operation

The Arkansas Pipeline Corporation will continue the operation of its entire pipe line system in South Arkansas, North Louisiana and East Texas, which includes the 69-mile eight-inch line from Bossier City to East Texas. A report in a recent issue of THE OIL WEEKLY that this line would be suspended was not correct.

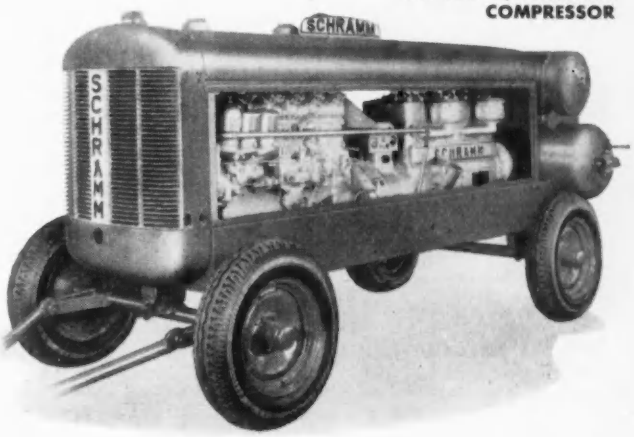
Company officials point out there will be no change in the purchases of crude oil by the Arkansas Fuel Oil Company because of the discontinuance of the operation of its Bossier City refinery. This crude now will be transported by the Corporation to an affiliated pipe line company for delivery to the Cities Service Refining Corporation, Lake Charles.

MODEL 200, PARSONS DITCHER

WHEN YOU THINK OF PIPELINE SUPPLIES AND EQUIPMENT . . . THINK OF BOYD

for Boyd is one of the best known suppliers in the southwest. Here, you will find everything from the largest power equipment to the smallest item used in pipeline construction and maintenance. Whatever your needs, call the nearest Boyd office.

MODEL 315, SCHRAMM COMPRESSOR



INTERNATIONAL TRACTRACTORS AND POWER UNITS
KOEHRING BACK HOES AND DRAGLINES
BUCYRUS-ERIE ANGLE DOZERS

GORMAN-RUPP PUMPS — GENERAL PIPE HOOKS
TIPTON PIPE CLAMPS — UNION WIRE ROPE
PIPE STRAIGHTENERS — WELDING DOLLIES
TRACKSON SIDE BOOMS

Machine and Hand Paint Rugs. Paint and Wire Brushes in all needed styles and sizes.

The Clarence L. Boyd Co., Inc.

TULSA, OKLA., LD 745 — GUTHRIE, OKLA., LD 1

AERIAL PHOTOGRAPHS SAVE YOU MONEY....

- Pipe Line Right-of-Way Surveys
- Geological Prospecting Surveys
- Geological Interpretation of Aerial Photographs
- Contour Maps from Aerial Photographs
- Planimetric Maps from Aerial Photographs

Substantial savings can be made through the use of Aerial Surveys to help determine geological areas best suited for prospecting and for studying the difficulties encountered in building a pipe line, or mapping a proposed route.

Aero Exploration — one of the oldest aerial survey firms — has successfully assisted dozens of companies with this important work.

'Phone, wire or write, and Aero will be glad to discuss with you how our service can save you time and money.

AERO EXPLORATION CO.

Phone 3-7121
1850 So. Boulder
Cable Address AEROEXCO

TULSA, OKLAHOMA

RUSSELL HUNT
President

Worth of Las Mercedes Field May Be Revealed Soon By Pipe Line Outlet

A great deal of interest is being shown in the Las Mercedes field, district of Infante, State of Guarico, almost due south of Caracas and the most westerly of Eastern Venezuela's producing areas. However, little is known of the details of sand conditions and structure, since Sociedad Anonima Petrolea Las Mercedes, the operating concern, has kept the information rather closely during its period of exploration and during the early period of development.

Las Mercedes 16, situated 14 kilometers east and slightly north from the proven part of the field, recently was completed at 6400 feet where it had been testing several weeks. The nature of the completion has not yet been released.

The field may get a pipe line outlet in the near future. Roads are under construction now. Until such time as the producers start running oil from the area, no index as to its importance can be ascertained. Thus far wells are shut in as fast as they are completed, not to be opened until the pipe line is finished.

The Las Mercedes Company, in which The Texas Petroleum Corporation holds a major interest, acquired a half interest in the properties now under development from the Caracas Petroleum Company by assuming a work obligation for its development. Formerly the North Venezuelan Petroleum Company had drilled 2 dry holes in the area under agreement with another company and had relinquished the property. Las Mercedes became interested and started operations, opening the field with Las Mercedes 2, completed November 25, 1941, as a dual-producer, making oil from one horizon and gas from another with total depth 5586 feet. During the early stages, due to the inaccessibility of the area and scarcity of materials, the field was a one-rig operation. The next well was a dry hole, and the second producer was completed in February of 1943. More equipment has been moved in and there are now four rigs running with another being moved in.

The field has 12 producers, all shut in, and several pays have been established, with most of the drilling having been inside probable limits of production, although several step-out wells were drilled, including the recently completed Las Mercedes 16.

Most wells are drilled to around 4600 feet before completing, usually as dual-zone wells.

Mexican Paper Points to Cost of Oil Expropriation

Mexico City's newspaper El Universal has asserted editorially that recent illegal stoppages of work in the oil industry of Mexico caused loss to the government of two thirds million pesos per week. Suspensions of work are carried out on numerous pretexts, including political grievances, declared the paper, and the latest one is supposed to have resulted from cancellation of contracts of certain men employed in El Plan camp in the Isthmus.

Petroleos Mexicanos, the government oil company, is constantly besieged for higher wages, the editorial stated, despite the fact that the oil industry workers are the best paid personnel in the republic.

In view of the labor demands and other difficulties, said the writer, it becomes obvious that instead of getting better, more, and cheaper oil, as promised by expropriation, this product can be obtained only at higher prices and with greater trouble.

Since expropriation, it was added, the dollar exchange as against the peso began to rise and so did the cost of living. The result has been that Mexico has not paid for her petroleum industry only by indemnities, now partly liquidated, but through a descent in living conditions of the population, especially the poorer classes, most of whom are on daily wage basis.

The time has arrived, asserted the writer of the editorial, when the administrators of the government should begin to recognize two pertinent facts: (1) that the petroleum industry is not the inexhaustible patrimony of the 26,000 persons employed in it but rather belongs to the people, and (2) that the government-operated oil industry is a business, like any other, which should be managed with judgment and by proper commercial methods, if it is to render effective benefits to the nation, which has acquired it at high material and moral cost.

Switzerland Considering Pipe Lines to Coasts

The construction of gasoline pipe lines linking Switzerland with Atlantic and Mediterranean ports is being considered according to the Swiss press.

A group of technical experts has been requested to study the plan, making use of the wartime experience of the Allies, the Foreign Commerce Weekly reports.

Anzoategui Test May Open New Field in Venezuela

Mene Grande Oil Company's La Ceiba 1, wildcat in the northeastern part of the State of Anzoategui, Venezuela, just south of the Mene Grande-Creole pipe line, was drilling and coring below 8150 feet and is expected to eventually open a new oil field. At this depth it has cored a body of sand in excess of 75 feet in thickness below 8050 feet, but has not run any tests beyond core-analysis. Portions of the sand showed definite evidence of oil saturation. Other showings above this point had been tested when operators set a string of casing around 7900 feet, but no production was obtained.

Mene Grande recently spudded a wildcat in the Caico Seco area, northerly from the Oficina area and 12 kilometers northwest of Socony-Vacuum Oil Company's Tascabana 1, which is drilling below 6240 feet after running electric logging survey to approximately 6000 feet. No encouraging showings were reported.

Gas-Distillate Well Discovered in Mexico

A new gas-distillate producing area has been opened in Northeastern Mexico, Martinez & Munoz, independent operators of Monterrey, having completed a wildcat across the Rio Grande from Lopeno, southern Zapata County, Texas. The well yielded an estimated 100 barrels of distillate and 20 million cubic feet of gas per day from the Wilcox formation at 5100 feet. The production in Lopeno field is from the Queen City sand at about 2800 feet, and it likewise may produce from the Wilcox, the Mexican discovery indicates. Gas production from Lopeno field is being piped to Monterrey, Mexico, for industrial use.

International Petroleum Names Chairman, President

Directors of International Petroleum Company, Ltd., elected F. B. Bimel, chairman of the board, and Philo Maier, president. Both offices formerly were held by the late R. V. LeSeuer. At the same time, Paul Lambright and B. A. Myers were elected vice presidents.

Bimel has been a director of International Petroleum since 1928 and was made a vice president in 1944. Maier formerly was chief engineer and later president of the Andian National Corporation, which operates a pipe line in Colombia.

Lambright began his career in the United States with The Carter Oil Company, and served subsequently in Argentina, Sumatra, Roumania and the Northwest Territories.

Myers became associated with International Petroleum through Tropical Oil Company, a subsidiary, and became a director in 1936.

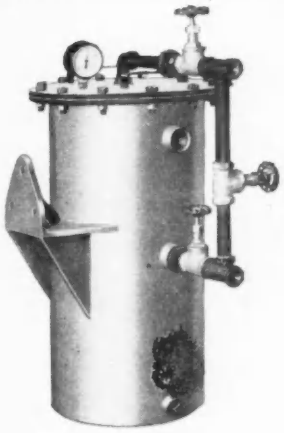
Iranian Output Gains

Production of Iranian oil fields rose to 11,521,555 tons in 1944 from 8,309,707 in 1939, Anglo-Iranian Oil Company's chairman, Sir William Fraser, told stockholders in London. The company meanwhile increased high-octane gasoline output to 1,250,000 tons annually for 1945 from 40,000 in 1940.

Anglo-Iranian Fleet

Anglo-Iranian Oil Company now holds 69 ocean going tankers of 758,000 deadweight tons. Before the war it owned 93 tankers of 980,000 deadweight tons, but 44 were lost. Twenty new tankers were built, but these only partly replaced capacity of those lost.

SUN OIL FILTER FOR
Diesel Fuel and Diesel Lubrication



FEATURES

Efficient

Convenient

Low first cost

Low operating cost

You will like it

No. 8-45 Diesel Fuel

Write or wire for full details

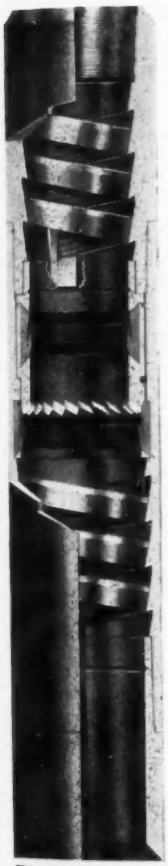
W. L. CLAY

Manufacturer

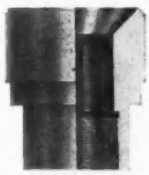
1529 West Main St. Oklahoma City, Okla.

BOWEN OVERSHOTS
FOR TUBING

2" — 4 1/8" O. D.
2 1/2" — 4 11/16" O. D.



catch and pack off · Plain Tubing · Upset Section · Plain Collars · Upset Collars and Mill over Ragged Tubing All With One Tool.



Blank Mill

Upset Section Packer Assembly

Patented

With one of these "Series 285" Bowen Tubing Overshots you are always prepared to fish for any size your string of tubing may present. Specifications are shown on page 494 in the Composite Catalog.

Catalogs with complete details will be mailed promptly upon request.

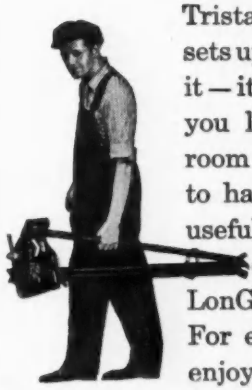
Through Supply Stores Anywhere in the U. S. A.

BOWEN CO. of TEXAS, INC.

Office: 2429 Crockett St., P. O. Box 1025, HOUSTON 1, TEXAS, Phone C-9457
Odessa, Texas, Phone 15—Midland, Texas, Phone 1439

RIDGID
Portable Tristand Vise

A handy, roomy workbench easily set up anywhere



• It isn't so much how handily the Tristand folds up, carries easily and sets up solidly exactly where you need it — it's the workbench convenience you like most. Look now — lots of room for dope pot and oil cans, slots to hang tools, a pipe rest and 3 very useful benders. And whether yoke or chain vise, you get tool-steel LonGrip jaws, easy on polished pipe. For easier work, convenience you'll enjoy — buy it at your Supply House.

RIDGID
WORK-SAVER PIPE TOOLS
THE RIDGE TOOL COMPANY · ELYRIA, OHIO, U. S. A.

☆ Rocky Mountain Area

Rangely Field Given Its First 1000-Barrel Well

Rangely field in Colorado gets first 1000-barrel well; 7 new wildcats noted in Wyoming; Montana's Cat Creek seething with activity; surprise completion given Kevin-Sunburst field.

Colorado

Rangely field, Rio Blanco County, clocked its first 1000-barrel well with completion of The Texas Company's U. P. 3-34. Initial tests showed production of 950 barrels of oil per day from the Weber. Later reports indicate production was over 1000.

The newest completion in Rangely came as talk spread that Standard Oil Company of California may build a pipe line connecting Rangely field with its southern California refineries. The California Company, Standard subsidiary, is a major operator at Rangely and at the productive Wilson Creek field a few miles east. The line would be about 600 miles long and probably would go by way of Las Vegas, Nevada. Although Standard officials put on an inspection tour of the northwest Colorado oil fields last week, no announcement has been made of any plans for piping the oil to California.

Wyoming

Wyoming let go with several wildcat starts, with Parker Brothers, and California rigging up rotary tools for a test on Nieber dome in Washakie County, The Texas Company rigging up in the Table Rock district in Sweetwater County, General Petroleum Corporation rigging up for a test in Cole Creek, and Continental Oil Company moving in materials for a wildcat on the Mellum dome, 43 miles southwest of Casper, both in Natrona County. The Ohio Oil Company is rigging up Washakie 8 in the Grass Creek area of Hot Springs County, and British-American Oil Company has derricks up for 2 wildcats in the Steamboat Butte section of Fremont County.

Elk Basin had a 490-barrel completion in Mackinnie's Henderson 2. Stanolind Oil & Gas Company's Ridgley 20-E on Grass Creek came in for 106 barrels per day. Other completions included 1 by Trigood in the Notches area of Natrona County; Pacific Western's Zimmerman Butte wildcat in Hot Springs County, which tested successfully on a drill-stem test; a 204-barrel completion for Continental in the Gebo Dome area of Hot Springs County, and a 240-barrel completion on the Lamb structure in Big Horn County by Hageman-Pond-Hanlon-Stanolind 1. Wildcat failures were Gem Oil's Owl Creek 1 in Hot Springs County and British-American's U. P. 1 on the Little Medicine Bow structure of Carbon County.

Montana

Kevin-Sunburst sprang a surprise when Prevol & Shay got a flowing well within 110 feet of a dry hole drilled 20 years ago by A. B. Cobb's Rainbow Oil Company. Prevol & Shay recently brought in 2 other producers on the half-forgotten 40-acre lease. The new well, No. 18, had topped the lime at 1840 feet and some oil was showing, so a control head was installed. When the crew returned the next day the derrick was being splattered with oil forced through a leak in the control head. The flow has not been gauged.

Wells Completed in United States in Week Ended November 10, 1945

Data preliminary and subject to revision. Revised and more complete data on all completions shown in monthly summary of drilling, published in second issue of each month. More detailed data on wildcats published in third issue of each month.

State or District	FIELD COMPLETIONS: New Wells *Oil	Gas	†Input	Dry	Total	Old Wells Deepened	WILDCAT COMPLETIONS *Oil	Gas	Dry	Total	ALL COMPLETIONS: This Week	Last Week	Cumulative: This Year	Last Year
Alabama												2	31	32
Arizona													6	
Arkansas	2			1	3				1	1	4	2	165	197
California	25	1		2	28				3	3	31	31	1,865	1,758
Colorado							1			1	1	7	45	24
Florida												1	13	3
Georgia													6	8
Illinois	22			5	27		1		7	8	35	31	1,667	1,711
Indiana									1	1	1	7	279	293
Iowa													1	2
Kansas	18	6	1	7	32	5			8	8	45	40	1,463	1,468
Kentucky												16	521	699
Louisiana	16		1	4	21		3	2	3	8	29	22	900	653
North Louisiana	6		1	2	9		1	2	1	4	13	11	362	239
South Louisiana	10			2	12		2		2	4	16	11	538	414
Michigan	3	2		3	8		1		9	10	18	14	662	589
Mississippi	2				2		2		3	5	7	3	329	172
Missouri													41	38
Montana	8	1			9		1			1	10	12	212	291
Nebraska													3	15
New Mexico	3	2		1	6				4	4	10	10	369	349
New York	15		10		25						25	25	1,002	1,083
North Carolina														1
Ohio	5	1		8	14						14	11	774	850
Oklahoma	22		1	9	32		2	1	12	15	47	24	2,007	1,555
Pennsylvania	27	1	15	2	45	1					46	51	2,515	2,642
South Dakota														1
Tennessee													1	9
Texas	72	18	1	29	120	10	4		26	30	160	124	6,307	5,242
E.Tex.Bor. Co.'s		9			9						9	3	104	29
E. Texas Field														4
Rest of E. Texas	3	1			4	2	1			1	7	7	207	240
North Texas	11			12	23	2	1		8	9	34	31	1,530	1,200
W. Central Tex.	5			2	7				4	4	11	8	406	354
West Texas	18			5	23	3	1		4	5	31	32	1,498	1,372
Tex. Panhandle	1	6			7	1					8	5	524	260
G. Coast, Upper	5			5	10	1	1		2	3	14	5	612	510
G. Coast, Lower	21	2	1		24	1			6	6	31	22	916	794
Southwest Texas	7			5	12				1	1	13	9	427	388
S. Central Tex.	1				1				1	1	2	2	83	91
Utah														1
West Virginia	1	9		8	18	1					19	21	693	826
Wyoming	3				3		3		2	5	8	17	167	147
Total U. S.	244	41	29	79	393	17	18	3	79	100	510	471	22,042	20,663

* Includes distillate wells. † Includes salt water disposal wells.

RMOGA District Meet Scheduled November 17

The Rocky Mountain Oil and Gas Association will hold a district meeting for the Eastern Wyoming Division in the Community Building at Osage, Wyoming, November 17.

Harry Thorson of Osage, member of the association's board of directors, will be in charge of arrangements.

Meantime, RMOGA is making final plans for its first annual meeting to be held at the Townsend Hotel in Casper, Wyoming, December 7 and 8.

The Friday morning session, December 7, will be devoted to a report by President Stock, and reports of various association committees.

☆ Oklahoma

New Pool Seen for Seminole; Comanche Has Shallow Strike

New pool looms in Seminole; shallow pay struck in Comanche; Noble County wildcats dry; Carter testing at Mottinger; development under way at North Lindsay.

Seminole County: A new pool looms southeast of Wewoka Lake at Mealy-Wolfe Drilling Company's Wallace 1, wildcat in NW NW NE 7-8n-7e, near Lima. The well indicated a new Cromwell sand zone when it kicked off flowing an estimated 8 barrels of oil per hour plus 4 million cubic feet of gas. Operators drilled to 3328 feet, total depth, after topping the Cromwell at approximately 3300 feet. Also in Seminole County, J. L. Bachman and Floyd Good went into an old hole to test the Cromwell sand at Stringfield 1, SE SW SE 10-10n-6e, Keokuk area, which recently

was revived by The Carter Oil Company and now has several good producers. The old well had been abandoned at 3390 feet after an unsuccessful try in the Earlsboro zone.

Comanche County: J. M. Womack appears to have opened a new shallow field on the east flank of the Lawton pool. Fullerton 1, SE SW NE 21-2n-10w, was drilled to 994 feet and after perforating casing opposite 2 saturated sands it flowed by heads for several days. After being put on the pump it produced 48 barrels of high-gravity oil in 8 hours. The test is on a 1020-acre block and was predicated on surface geology worked out by L. Douglas Wise of Lawton.

Noble County: East of the Lucien pool The Ohio Oil Company appears to have a duster at Hubbart 1, wildcat in NW SW SE 18-20n-1w. Drilled to the second Wilcox sand, logged at 5189 feet, it was abandoned after drilling to 5245 feet, total depth. A slight oil show was logged in the horizon but a drill-stem test between 5132-38 feet recovered 940 feet of salt water. Another failure was J. E. Trigg's Patch 1, SW SE SE 5-21n-2w. Oread was found at 3010 feet; Layton at 4119-60 feet, and it was abandoned at 5299 feet. Deep Rock Oil Corporation's White 1, SW NE NE 19-23n-2w, wildcat west of the Billings pool, was drilling in shale and lime below 2500 feet.

McClain County: Oklahoma oil men had their eyes on The Carter Oil Company's Mottinger 1, C NW NW 5-6n-3w, prospective pool opener southwest of the Washington field and considered the state's hottest play as testing got under way in an effort to give this section of the county its third deep pool in a little more than a year. Seven-inch casing was set at 10,815 feet on the Simpson dolomite following a drill-stem test and electro-log survey. On the test the well flowed an estimated 100 barrels of oil an hour. Carter is feeling for the Bromide sand at Hawkins 1-C, another deep wildcat in NE NE 34-6n-3w, which already has reported oil shows in the Deese and lower Cherokee horizons. A small show of oil also was reported in the Hunton lime between 8228-8320 feet where a drill-stem test recovered 570 feet of gas-cut mud. The wildcat was drilling below 9200 feet.

Cities Service Oil Company, which has the state's deepest producer at Lawson 1, 22-5n-4w, pool opener for North Lindsay field, has started developing the area with 2 new locations announced at Odom 1, C NE SE 21-5n-4w and Lawson 1-B, C NE SW Sect. 22. Frank Russell et al are drilling below 3800 feet in Sandburr 1, NE NW NE 22-5n-4w.

Garvin County: Sohio Petroleum Company announces 2 new wildcats to renew interest in the Antioch and Pauls Valley area. Tolbert 1, NE NW NE 9-3n-1w, east of Antioch, set surface pipe and was preparing to drill. Howard 1, SE SE NW 17-1n-2w, near Eola and east of the Robberson pool, completed pits and cellar and was preparing to make hole.

Okfuskee County: With two gas discoveries to its credit, Amerada Petroleum Corporation is trying for a third strike on a block west of Weleetka. Operator has staked Berryhill 1, SW SE NE 17-10n-10e, 1¼ miles west of Canard 1, gas discovery in Sect. 16 completed 2 months ago for 20 million cubic feet per day. Nearest oil production is 2¼ miles northwest.

☆ Kansas

New Gas Area Opened Near Sawyer in Pratt County

Sawyer wildcat opens new gas pool; Merten pool extension seen; prospective pool opener noted for Barton; Katchelman deepens to Arbuckle, gets big gas flow; Meade County wildcat to be tested.

Pratt County: Bridgeport Oil Company et al's Brown 1, NWC 25-29s-13w, wildcat 4 miles west of Chitwood pool, gauged about 4 million cubic feet of gas to open a new gas area near Sawyer. Viola lime was topped at 4460 feet and with pipe set and perforated between 4466-72 feet and acidized with 5000 gallons, the well gauged 2.3 million cubic feet and later increased to 3.9 million cubic feet per day with 700 pounds rock pressure.

Barton County: A ¾-mile northeast extension of the Merten pool appeared certain at Phil-Han Oil Company's Mauler 1, SW SW SW 36-18s-15w, which reported a hole full of oil after drilling the Basal sand from 3564-67 feet. Reagan sand was topped at 3543 feet and 5-inch pipe has been set and preparations are under way to test.

Pawnee County: After a disappointing show in the Simpson dolomite, Kiowa Drilling Company et al's Katchelman 1, pool opener in 34-22s-16w, 6 miles southwest of the Zook field, was deepened to the Arbuckle, where it tested an estimated 35 million cubic feet of gas per day. Originally completed at 4060-62 feet and testing 110 barrels of oil daily on pump, production gradually decreased before it was deepened to Arbuckle where gas showed from 4078-4107 feet.

Meade County: Stanolind Oil & Gas Company was preparing for a pumping test at Horace C. Adams 1, SWC 7-35s-29w, wildcat 5 miles east of the new Adams Ranch gas pool. The well was rated at 75 barrels of oil plus an equal amount of water from 6230-68 feet. Gravity was 27.2 degrees, corrected.

McPherson County: Sharon Drilling Company's Crowther 1, NW SW NW 24-18s-1w, discovery well for the Battle Hill pool, was given a physical potential of 1800 barrels of oil and 25 barrels of water per day from Mississippi lime at 2825-34 feet. The strike is 1½ miles northeast of the Canton North pool.

☆ New Mexico

Skelly Field in Lea County Is Given New Permian Zone

New Permian zone given the Skelly field, Lea County; considerable prospective acreage to the east of the prolific Ellenburger discovery for the Penrose-Skelly field is eliminated by granite being reached by an outpost.

Lea County: Amerada Petroleum Corporation's State 1-P-B, C SW SW 16-23s-37e, and a northeast offset to a 3600-foot Grayburg lime producer in the Skelly field, uncovered a new and deeper zone in swabbing 3 barrels of 38-39-gravity oil hourly from Glorietta (Holt) perforations at 5058-65 feet, with pipe on bottom at 5075 feet. Additional perforations will be made at 5015-48 feet, with prospects of a flowing producer. This strike logged base of the San Andres at 4965 feet with elevation of 3332 feet. First oil pay was called at 4980 feet, and the main zone of saturation at 5048 feet. State 1-P-B is a mile southeast of Skelly Oil Company's Steeler 2, a 7200-foot failure that tested show of gas and water at 5065-5216 feet followed by zones of nominal saturation in the Clear Fork and Tubb, topped at 5400 feet and 6140 feet, respectively.

Rowan Drilling Company's Elliott 1-B-15, C NW NE 15-22s-37e, 1½ miles southeast of the prolific Ellenburger discovery for the Penrose-Skelly field, logged granite at 7320-50 feet with elevation of 3416 feet. Top of the granite is higher than 4 granite tests to the east in the Paddock field and to the southeast in the Drinkard field. This development indicates the Ellenburger strike is less than a mile west of the granite uplift, where the Ordovician is absent. Granite was reached at 8202 feet in the discovery, which was completed by N. G. Penrose, Inc., from perforations at 8059-8140 feet. Four offsets to the discovery are underway. Elliott 1-B-15 passed up probable oil production from the Glorietta at 5078-5255 feet and in the Clear Fork at 6400-6520 feet.

☆ West Texas

Andrews County's Simpson Strike Has Natural Flow

First Simpson strike in Andrews County makes natural flow; completion gauge taken on Midland County's first discovery; University lease sale attains new record-price per acre near Block 31 field.

Andrews County: Humble Oil & Refining Company's Parker 1, southwest offset to the Martin pool Clear Fork discovery, confirmed earlier production indications from the Simpson in flowing 380 barrels of 41.7-gravity oil natural on 19-hour test, with gas-oil ratio of 6800/1, from perforations at 8700-50 and 8775-90 feet. The flow was through ¾-inch tubing choke the first 2 hours, then on ⅜-inch the remainder of the test. Production is from the McKee sand, topped at 8720 feet with elevation of 3325 feet. Parker 1 tested water in Ellenburger at 9030-72 feet. Probable production was passed up in the 7000-foot Clear Fork (Tubb) and also in the Silurian, topped at 7985 feet.

Magnolia Petroleum Company's Martin 2, Ellenburger prospect and 5½ miles north by east of the Martin pool deep well, was drilling at 7250 feet, having entered the Clear Fork at 6120 feet, or 150 feet high to Martin 1, a Devonian failure at 10,118 feet and 2 miles northeast.

Stanolind Oil & Gas Company's University 1-BB, southeast offset to its Three Bar pool discovery, entered the Devonian at 7910 feet, or 93 feet high and drill-stem tests made at intervals in drilling through the thick pay indicate the discovery is not producing from the most effective oil zone in completing from perforations at 8300-50 feet.

Shell Oil Company and The Texas Company's Ratliff-Bedford 1, dual completion from Devonian and Ellenburger

perforations, flowed 1214 barrels of 44.3-gravity oil with gas-oil ratio of 577/1 via ½-inch choke after using 1000 gallons of acid in the lower zone. The Devonian potential, taken late in September, was 1105 barrels of 42.9-gravity oil with gas-oil ratio of 1015/1 through ½-inch choke after using 3000 gallons of acid.

Midland County: Humble's Buchanan 1, 9 miles southeast of Midland and first producer for the county, flowed 270 barrels of 45.7-gravity oil and 32 barrels of water, with gas-oil ratio of 4350/1, on initial gauge through 11/32-inch choke after using 4500 gallons of acid through Strawn (Pennsylvanian) perforation at 10,370-10,390 feet. Pressures were equalized at 2950 pounds prior to test, and dropped to 350 pounds on tubing and 1700 pounds on casing. The entire pay zone was not included in the perforations. This wildcat tested water at 12,574 feet in Ellenburger, topped at 12,170 feet, and indicated saturation failed to produce when acidized through perforations in the Ellenburger.

Crane County: The Atlantic Refining Company added to its lease protection near its Block 31 pool dual-pay strike, now awaiting official gauge, by setting the pace on bidding at the November 2 University lease sale. The company paid an all-time record price of $560,000 cash for the N½ Sec. 37, situated more than 2 miles east by south of the discovery. A bonus of $200,000 cash was paid for the S½ Sec. 22, about 2 miles north by east of the producer, although this tract has a 10,658-foot Ellenburger failure. The company paid $275,000 for the NW¼ Sec. 26, being a southeast offset to the failure, while $110,000 was paid for the W½ Sec. 32, more than a mile west of the producer.

John I. Moore et al's Waddell-Southland 1, wildcat, will resume perforating higher in the Devonian, topped at 5906 feet, after negative results between 7025 feet and 5950 feet. Humble's Cowden 1, 10 miles south by east of the Block 31 pool, was drilling dry dolomite at 8285 feet in Ellenburger, topped at 7710 feet. It is trying to establish the water level before plugging back for test of the Devonian, topped at 6085 feet.

Gaines County: Amerada Petroleum Corporation's Jones 1-A failed to make a commercial producer from the 9100-foot Wolf Camp, or Basal Permian, and is conditioning the well for an official gauge of Devonian perforations at 11,181-11,284 feet and 11,380-11,420 feet, where a prolific flow of sweet crude was established prior to attempting dual completion. Stanolind Oil Purchasing Company will purchase this oil, absorbing trucking cost to its facilities in the Wasson field, until a pipe line extension is built.

On Pumping for Profit

When we began the manufacture of JENSEN pumping equipment more than 25 years ago, there were few production restrictions not imposed by the equipment itself. It had to be good.

To this day we make JENSEN equipment as though every customer were engaged in a mad race to drain a field. As a result, any JENSEN-equipped well is likely to be more profitable and dependable. The JENSEN Unit has comparatively few parts, is easy to install and easily balanced with the well, and is as strong and healthy as a well-kept Missouri mule.

Perhaps the remarkable difference in a JENSEN Unit is not as noticeable as it would be if production were still unrestricted, but it sure shows up on the ledger in the office at the end of any year. And men in the field who look after JENSEN-equipped wells also appreciate the difference.

You can get along nicely without JENSEN Units. But why be satisfied with equipment less completely satisfactory? Investigate! See Composite Catalog pages 1473-6 and talk with men who have **first-hand information.**

JENSEN BROTHERS MANUFACTURING CO.

. . . Coffeyville, Kansas, U.S.A. . . .

EXPORT OFFICE: 50 CHURCH STREET, NEW YORK CITY

☆ North Texas

Second Failure Recorded Near Archer Discovery

Second failure recorded near Archer County deep lime discovery; new district depth record to be sought by Grayson County wildcat; Jack County Bend conglomerate prospect delayed on completion test.

Archer County: Homer W. Snowden et al's Richardson 2, Lot 15, J. Scott survey, was abandoned at 5160 feet, having failed to produce from the 4700-foot Bend conglomerate zone uncovered by Robertson Drilling Company et al's Richardson 1. Snowden et al previously drilled a 4744-foot failure in Lot 14.

Montague County: Venmex Oil Company et al's Arverson 1, offset to the 2½-mile extension well given the Hildreth field, logged oil-saturated conglomerate at 6011-42 feet, and will complete through perforations after setting pipe on bottom at 6107 feet. This is the first of more than a score of tests scheduled after the strike to reach the pay level.

Jack County: Stephens Petroleum Company's Jackson 1, near center of NW¼ W. C. Ry. Sec. 1, A-904, and 1½ miles east of the Cherryhomes pool, lost casing seat on preliminary test of 30-foot section of effective saturation in Bend conglomerate, topped at 4710 feet. This wildcat entered the Bend at 4680 feet and Marble Falls at 5135 feet with elevation of 1136 feet, and was drilled to 6235 feet. It was drilled on geophysical information, and occupies a higher structural position than the Cherryhomes area.

Helmerich & Payne, Inc.'s Palmer 1, ½-mile north of the Borden pool discovery in Simpson at 6720-6860 feet, entered the Bend at 5602 feet, or 13 feet low, and was drilling lime at 5910 feet.

Continental Oil Company's Cox 1, 1½ miles northeast of Gibtown and an Ellenburger prospect, entered the Bend

OIL FOR TROUBLED WATERS

Only by a return to peaceful, co-operative practices in industry . . . both *within* and *between* Nations . . . can the waves of discontent and strife be permanently stilled, or can we as individuals or as an industry hope to prosper.

Just as the A.P.I. became the strategic center of intelligence and supply for the Allied Military Command in connection with the one fighting resource most vital to Victory, so in the years of peace ahead, "our" institute will contribute to the quick and orderly distribution of the many new and improved petroleum products which stemmed from wartime research.

To the end that these achievements may result not only in a strengthening of the entire petroleum industry, but in the greater welfare and higher living standard of all peoples everywhere, the LION OIL COMPANY pledges its continuing support of the many purposeful activities of the A. P. I.

LION OIL COMPANY EL DORADO, ARKANSAS

SAFETY COURTESY PROMPTNESS

For four generations this Bank has exercised a potent influence in the development of San Antonio and Southwest Texas, all operations being guided by the principles of "Safety, Courtesy, Promptness," always. May we serve you?

FROST
NATIONAL BANK
OF SAN ANTONIO

CAPITAL and SURPLUS:
$3,000,000.00

MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION

at 4040 feet, and was drilling dry lime at 4220 feet.

Grayson County: Standard Oil Company of Texas has awarded drilling contract for a projected 11,000-foot Ellenburger test a short distance northwest of Sherman. The company made an extensive geophysical survey of the area, and has a large block of supporting acreage. It is due to set a new depth record for the district, currently held by The Pure Oil Company's Gordonville 9919-foot failure.

Davies Says Allies Gave Full Share of Oil for War

Adequate fueling of World War II would have been impossible without the contribution of overseas sources, it was declared last week by Deputy Administrator Davies, writing in the first issue of "Logistics," a new publication of the Army Ordnance Association.

"Some people have wondered why even more oil was not taken from foreign fields and less from home sources," Davies said. "The reasons were purely physical and geographical and were never in any sense political. At no time was there the slightest holding back by our allies or the slightest reluctance to develop or deplete fields that they controlled . . .

"Our domestic fields could not meet our own world-wide needs—the needs of our forces overseas and our essential domestic use—and that without foreign oil and reverse lend-lease we would have fallen short of meeting our own home and overseas requirements."

☆East Texas

Hopkins Wildcat Loses Its Favorable Structural High

Hopkins County wildcat fails to maintain its favorable structural position in reaching the Paluxy zone; Chapel Hill deep test will attempt to test high pressure formation through stuck drill pipe.

Hopkins County: Delta Drilling Company's Livinston 1, Travis Peak project and 5 miles west by south of the Pickton field, entered the Paluxy at 6240 feet with elevation of 460 feet, and was coring for sand beds at 6260 feet. While it is relatively high for the area, top of the Paluxy was anticipated at a higher level based on the upper markers.

Wildcats: Sohio Petroleum Company's Butler 1, Rains County, was drilling sandy shale at 6260 feet. In Franklin County, Humble Oil & Refining Company's Geron 1, a failure in the 4900-foot Paluxy, was drilling limey-shale at 5435 feet to explore the Glen Rose for geological information.

Smith County: Sinclair Prairie Oil Company's Shofner 1, Chapel Hill field Smackover project, will make a production test through drill-pipe stuck at 13,577 feet as a final step before abandoning. Drill pipe was cut at 13,484 and 13,403 feet, then lubricated with oil without success in applying maximum pull. This record depth test for the district encountered high-pressure formation and lost rotary returns below 13,363 feet. However, an analysis of the gas indicated it is noninflammable.

Phillips Petroleum Company's Englander 1, scheduled Smackover test 3½ miles south by west of the company's South Tyler 2-well pool, was drilling sandy-shale at 13,040 feet. It is credited with having entered the Travis Peak at 10,365 feet.

Hawkins Field: The Texas Company has applied for permits to drill 6 additional wells to maintain its well density with other producers. Humble Oil & Refining Company is making good progress on its program of 45 new wells during the last quarter of 1945, and will proceed with the drilling of townlot sites. Applications for permits have been filed to drill the C. E. Russell 1/10 of an acre and the Emily Sasser 3/1000 of an acre sites.

Tells of Industry's Need For Technology in Future

If the demand for crude oil in California increases proportionately to the anticipated increase for the United States, during the next 20 years, productive capacity of the State will soon fall behind, A. C. Rubel, vice president, Union Oil Company of California, last week told the Southern California Section of AIME.

Crude Petroleum demand in the United States, based on normal trends, show an increase of 31 percent by 1965.

Productive capacity in California can be augmented by technology, he stated. The use of exploratory tools now available has passed the point of diminishing returns. Neutron ray logs in old fields and the possibility in the future of drilling prospect holes to 10,000 feet at a cost of $2.00 per foot will contribute to the discovery of new reserves.

Other sources of crude petroleum, as pointed out by Rubel, include: Secondary recovery by injection of gas or water, or by solvent extraction, and improved primary recovery by better completions and better production practices. The biggest obstacle to these is the lack of intelligent cooperation on the part of companies and or land owners.

Fields adjacent to the coast and far out at sea may yield new oil, but these will be costly to explore, exploit and develop.

Tar sands in California, oil shales and coal in adjacent states may be processed for oil, development of these substitutes depending upon the price of oil.

As regards imports, Rubel pointed out that the distance is great and that foreign demand increases more rapidly than the United States demand. If imports become competitive, he expects tariff barriers to rise.

The most important trends showing in the postwar period, as seen by the speaker, are political and social. If labor-management relations cannot be improved, technology is useless. American free enterprise and labor are complementary; neither can survive alone. Trade unions are fundamental. However, both management and labor should be responsible to their own constituents, the public, and the nation.

If companies cannot cooperate in the operation of oil fields, then the government will take over to prevent waste, he said.

AVAILABLE SOON

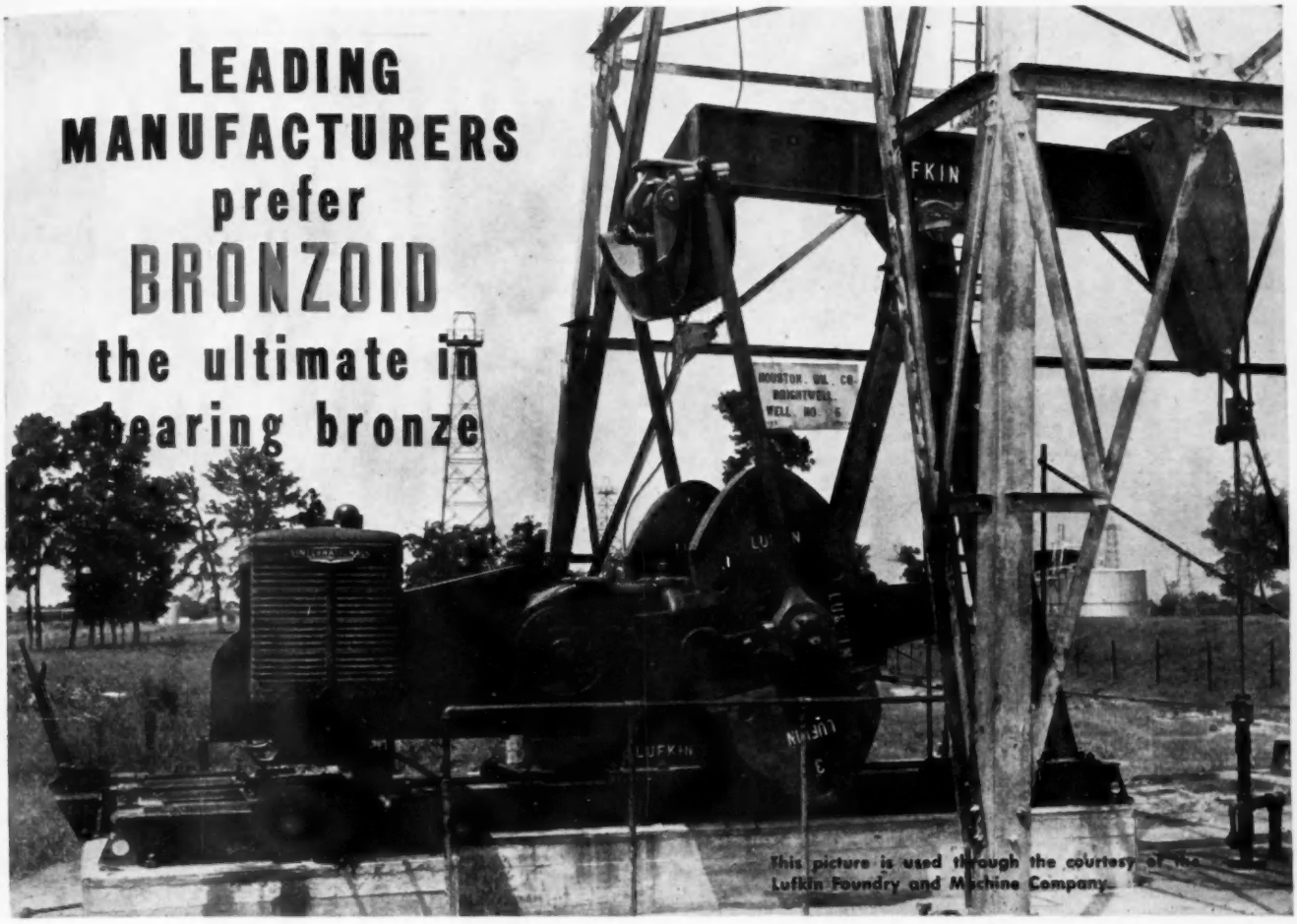
COFFING
LIFTING and PULLING EQUIPMENT

Will soon again be available for your production, construction and maintenance jobs. After almost four years of day and night production for the Armed Forces we are now in position to accept and schedule your orders. We are proud of the production record we have made and of the important part COFFING products played in helping to restore Peace on Earth. Our standard line of hoists were used by our fighting men so there is no reconversion period for us.

Write for Folder No. 4

COFFING HOIST COMPANY
Danville U.S.A. Illinois

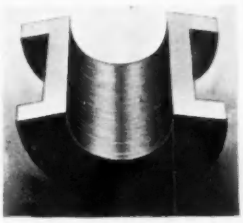
LEADING MANUFACTURERS prefer BRONZOID the ultimate in bearing bronze



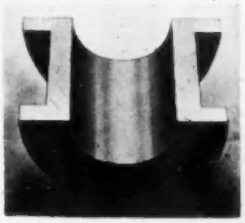
This picture is used through the courtesy of the Lufkin Foundry and Machine Company.

BRONZOID is the standard bearing metal for Lufkin Pumping Units.

Many other outstanding manufacturers have enhanced the value of their products by adopting BRONZOID.



COMPARATIVE TESTS* prove the superiority of BRONZOID in solving bearing problems



A regular bearing . . . SCORED and WARPED

The above bearing produced from bronze containing regular lead was badly scored and so badly warped that the metal squeezed out.

A BRONZOID bearing . . . SMOOTH and TRUE

The high lead bronze bearing shown above, containing BRONZOID treated lead, was run one hour and 25 minutes longer than the other bearing, yet was not scored or warped, and lost none of its resilience.

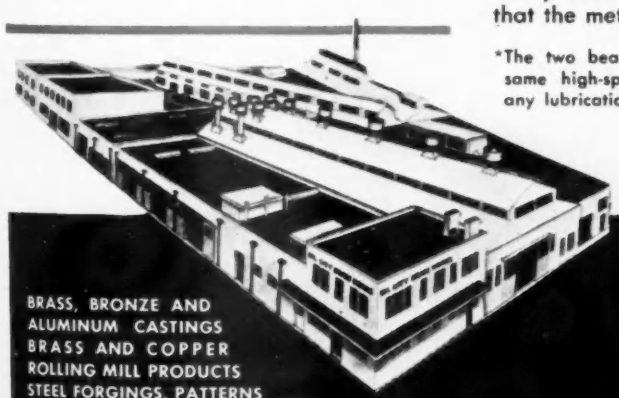
*The two bearings shown were given the same high-speed operating tests without any lubrication whatsoever.

To prove superiority, OIL CITY will run comparative tests free of charge. Write, wire or phone NOW.

Also call OIL CITY for:

Red-Rex

QUICK JOINT PIPE UNIONS



BRASS, BRONZE AND ALUMINUM CASTINGS
BRASS AND COPPER ROLLING MILL PRODUCTS
STEEL FORGINGS, PATTERNS & COMPLETE MACHINE SHOP SERVICE

OIL CITY BRASS WORKS

BEAUMONT, TEXAS, U. S. A.

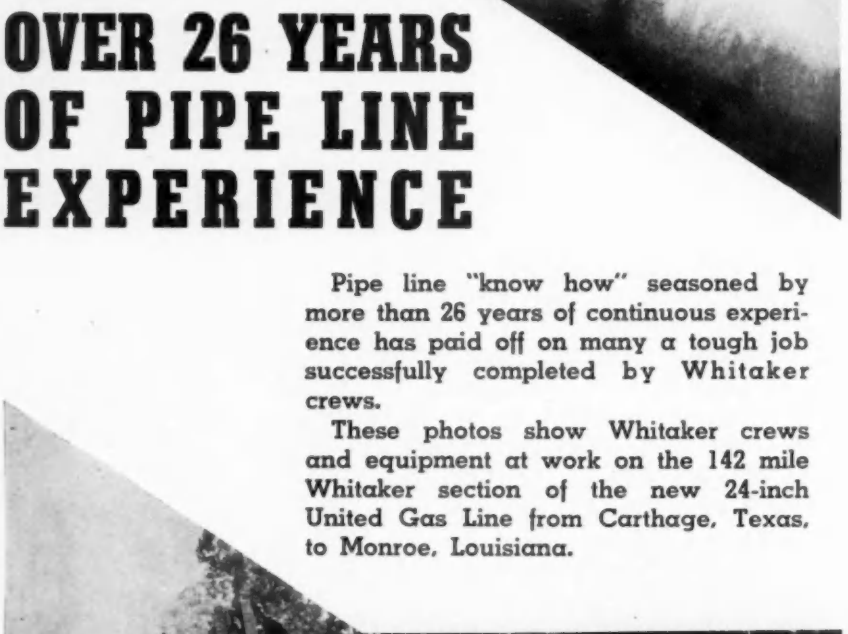
HOUSTON BRANCH: 634 N. EDGEWOOD ST. - L. H. KENNON, *Manager* - Phone WOODCREST 6-1739

Founders Manufacturers Machinists

OVER 26 YEARS OF PIPE LINE EXPERIENCE

Pipe line "know how" seasoned by more than 26 years of continuous experience has paid off on many a tough job successfully completed by Whitaker crews.

These photos show Whitaker crews and equipment at work on the 142 mile Whitaker section of the new 24-inch United Gas Line from Carthage, Texas, to Monroe, Louisiana.



For Dependable Pipe Line Service Consult

O. C. WHITAKER CO.

ENGINEERING & PIPE LINE CONTRACTORS

New Construction · Reconditioning · Taking Up Old Lines

General Offices

Dan Waggoner Bldg., FORT WORTH, TEXAS

Offices & Warehouse: 3300 Navigation Blvd., Houston, Texas

☆East Texas Border

Carthage Gas Field Is Given Commercial Oil Production

Oil field opened in Dotson area; Carthage gas field gets commercial oil production.

Panola County: Commercial oil production for the Carthage gas field was reported at Mid-Continent Petroleum Corporation's Priestly Holmes 1, H. C. Childress survey, 5 miles south of Carthage. The discovery was flowing 20 barrels of 40-gravity oil an hour per million cubic feet of gas, based on three 8-hour tests through various sizes of chokes. The gas ratio is 67-million cubic feet of gas daily. Oil production is estimated as 1340 barrels daily, which would make this one of the largest oil wells in the Border Counties outside of the Rodessa pool. The well is producing from the upper section of the Pettit lime through 10 perforations from 5964-69 feet and through 182 perforations from 5868-5920 feet in the lower Pettit section.

The Ohio Oil Company is erecting tanks to take a gauge of J. O. Britton 1, William Taylor survey, Dotson area, a wildcat which began indicating 41.2-gravity oil production from 6608-54 feet through 153 perforations. A 2½-hour drill-stem test recovered 1350 feet of gas-cut and 91 feet of oil-cut mud. The test was treated with 5000 gallons of acid and closed in. When opened it began spraying oil, Pettit was topped at 6358 feet, a transitional zone from 6668 feet; total depth is 7001 feet where 5½-inch casing is cemented.

Marion County: Jefferson Oil & Gasoline Company's M. J. Whelan Estate 1, Thomas Gillespie survey, is considered by the Texas Railroad Commission as the Travis Peak oil discovery in the Jefferson field, and has been granted an allowable of 160 barrels daily. The well was completed for 217 barrels of 41.3-gravity oil through ⅛-inch choke on tubing. Perforations were from 7040-50 feet. Operator's DeWare 1, is considered to be the first oiler in the area.

Rogers Lacy's wildcat Scott 1, Alex Johnson survey, is drilling below 6385 feet in shale. Magnolia Petroleum Company's Orr 1, R. B. Fowler survey, is below 4010 feet.

INGA Dates Changed

The annual meeting of the Independent Natural Gas Association of America, scheduled for Dallas November 26 has been postponed until December 10.

This date will afford the association's membership the opportunity of attending the Federal Power Commission hearings which will convene on that date in Dallas. The association meeting has been announced as "a streamlined business session."

☆South Central Texas

New Production Is Opened By Humble in Dimmit County

New production being opened in Dimmit County; Atascosa County wildcat tests holding interest; new wildcat is staked in Guadalupe County.

Dimmit County: Humble Oil & Refining Company's Davis 1, T&NO sur-

vey, near Carrizo Springs, is cleaning into pits making gas and wash water to indicate the opening of new production. Operator drilled to 7550 feet, set 5½-inch casing at 2767 feet and perforated at 2725-27 feet for a squeeze job. Final perforations were made at 2710-17 feet. No gauge has been announced.

Atascosa County: Quintana Petroleum Corporation's Guy H. Smith 1, wildcat 13 miles southeast of Pleasanton, William Waggoner survey, was drilling below 4150 feet in sand and shale. A drill-stem test at 2400 feet in the Reklaw recovered 105 feet of fluid, including oil, mud and drilling water.

The same company's C. Muil 1, wildcat 11 miles southeast of Pleasanton, was sidetracking at 7820 feet.

Humble's Schrosch 1, wildcat southwest of Jourdanton, was drilling below 7300 feet in shale after a drill-stem test at 7277-86 feet recovered 100 feet of condensate-cut mud and 93 feet of gas-cut mud at 7285-95 feet.

Bastrop County: Continental Oil Company's Willie Malina 1, wildcat 4½ miles north of Cistern, was coring below 9175 feet in sandy shale.

Joe O. Williams et al's A. E. Rosanky 1, 12 miles south of Bastrop, was delayed with a fishing job at 1500 feet.

Gonzales County: Quintana Petroleum Corporation's Anna Spahn 1, wildcat 4 miles northwest of the Gonzales townsite, has protection string set at 8075 feet.

Guadalupe County: L. V. Manry of Houston has staked a wildcat in the James Alley survey about 10 miles south of Seguin. It is the Effie Williams et al 1 on a 95-acre tract.

☆ Southwest Texas

Webb Has Shallow Wildcat; Starr Test Is Completed

Shallow wildcat spotted in Webb County; North Rincon field well completed; Duval and McMullen wildcat tests are coring.

Webb County: A 2400-foot wildcat has been staked 9 miles southeast of Mirando City by John F. Camp. It is the Marrs McLean 1 on a 600-acre lease in the Henry Jones subdivision, E. Garcia Tract, Block 7.

In the Bruni field, Houser & Campbell have located A. M. Bruni Estate 1, M. Arispe Grant.

Starr County: On a potential gauge, Arkansas Fuel Oil Company's F. F. Martinez 15, North Rincon field, flowed 157 barrels of 46.2-gravity oil daily through a 5/32-inch choke from perforations at 4576-80 feet.

Baldridge & King's A. Guerra Estate 1 is a new test in the LaReforma field, being 1135 feet south of Porter & Pickens' A. Guerra 1.

Coastal Refineries, Inc.'s Basillo Solis 3, Garcia field, was drilling below surface casing set at 293 feet.

Duval County: Argo Oil Corporation's John E. Murphy 1-C, wildcat 5 miles northeast of Seven Sisters, was drilling near 4400 feet in sand and shale.

McMullen County: Plymouth Oil Company's Harry Ezzell, Agent 1-A, wildcat 6 miles southwest of Calliham, was coring at 5635 feet in hard sand and shale.

FACING AN EXPANDING FUTURE . . .

Largely occupied with the full-time job of keeping our vast war machine in working order the past three years, the oil industry is now once again able to use facilities to meet growing civilian needs. Petroleum refining, already the largest individual industry in Texas, faces an expanding future. The importance of sound financing will not be overlooked by the men who plan ahead. Through years of close association with the industry, the banks of Fort Worth have learned to appreciate the oil man's problems, and to offer sound financial aid when needed. Any opportunity to discuss the financing of oil producers and those who are connected with any phase of the oil industry will be welcome.

THE FIRST NATIONAL BANK
THE FORT WORTH NATIONAL BANK
CONTINENTAL NATIONAL BANK
of Fort Worth

MEMBER BANKS OF THE FORT WORTH CLEARING HOUSE ASS'N.

☆ Lower Texas Coast

Quintana's Calhoun County Test Has Final Completion

Quintana well flowing into tanks to open new Calhoun County pool; Pettus sand opened in Burnell-Wilcox field; Humble enters Theis pool; Willacy County wildcat testing.

Calhoun County: Final completion is being made at Quintana Petroleum Corporation's Shofner 1, Rodriguez survey, Frio sand discovery well in the Port Lavaca area. This well is reported flowing into tanks without a gauge from sand logged at 5710-20 feet, where a 25-minute drill-stem test recovered 560 feet of pipe line oil. While flowing into tanks the working pressure was reported to be 950 pounds. Potential gauge is slated to be run immediately. Total depth was near 6000 feet with pipe set at about 5900 feet.

Bee County: Final gauge has been made at Blanco-Buchanan's C. A. Henderson et al 1, which opens Pettus sand production in the Burnell-Wilcox pool. The well flowed 35 barrels of oil daily through a ¼-inch choke from perforations at 3515½-17 feet. Tubing pressure was 200 pounds. The same operator's Henderson 2 recovered 1450 feet of pipe line oil and 6 feet of mud on a drill-stem test at 3519-27 feet and will drill to the Wilcox zone before making final completion.

Humble Oil & Refining Company has entered the recently-opened Theis field by staking 2 tests. They are the McCelvey Estate 1 in the R. S. Barnes survey, and the B. W. Adams 1, J. B. Atkins survey. These tests are offsets to Tom Graham's Theis 1 discovery well.

W. C. McBride, Inc.'s L. N. Connally 1, wildcat 4½ miles northeast of Beeville, has been abandoned at 3850 feet.

Nueces County: Texon Royalty Company's Anton Kocurek 10, deep test in the Saxet field, has set 5½-inch casing on bottom at 10,525 feet and is preparing to complete.

Willacy County: Humble's W. S. Murphy 1, wildcat 1 mile north of San Perlita, is making a series of squeeze jobs at 10,800-900 feet before making a final completion attempt. This wildcat test has 5½-inch casing set on bottom at 11,207 feet.

Live Oak County: A 4250-foot Vicksburg sand wildcat has been staked by H. E. Dirks et al one mile west of Cadiz. It is the Mrs. E. Turner 1 in the B. B. Atkins survey 2.

North Texas Section AIME to Meet Thursday

A meeting of the North Texas Section of AIME will be held in Bowie, Texas, November 15 with the Wichita Falls group in charge as sponsors. This group includes E. B. Nicholson, Continental Oil Company; W. H. Collins, Shell Oil Company; T. E. Timmons, Dowell Incorporated; Roland Gouldy, Bridwell Oil Company; W. Turner Wynn, Stanolind Oil & Gas Company; and K. B. Davidson, Humble Oil & Refining Company.

Opening in the afternoon at Morrow's Coffee Shop, Nicholson will give an illustrated talk on the Hildreth field and this will be followed by a trip through the Hildreth field. The evening program includes dinner and a sound movie, "Big Inch Pipe Line," followed by an entertainment hour.

Leases to Be Sold

Sealed bids on 6061.62 acres of oil and gas leases on restricted lands of the Five Civilized Tribes will be opened Dec. 4 at 10 a. m. at the office of the superintendent at Muskogee, Oklahoma. Leases being offered are in Creek, McIntosh, Okfuske, Hughes, Seminole, Haskell, Pittsburg, Coal, Garvin, Grady, Stephens, Jefferson, Carter, Love and Marshall counties.

Helmerich & Payne, Inc.

PHILTOWER

☆

TULSA, OKLAHOMA

☆ Upper Texas Coast

Altair Field Has Extension; Humble Test at 14,485 Feet

Altair field extended westward; Humble's test becomes deepest drilling on Gulf Coast; Frio sand opened in Wharton County pool; Sugar Valley pool gets new location.

Colorado County: The Superior Oil Company has extended the Altair field a location west with the completion of Pryer 1, west offset to the Matilda Tait 2-A. The well flowed 349 barrels of 56.5 gravity oil daily through ¼-inch choke from perforations at 8242-50 feet. Gas-oil ratio was 3444/1. Location for the Tait 4-A has been staked 1250 feet northeast of the 3-A well.

Harris County: Humble Oil & Refining Company's Milo 10, Tomball field, became the deepest active test on the Gulf coast when it drilled past 14,485 feet in hard sand and shale. This is the deepest ever drilled by Humble.

Magnolia Petroleum Company's 3 Warren Ranch, southwest flank of the old Hockley dome, has set 5½-inch casing at 6300 feet for completion. This flank test topped salt at 4280 feet and went out of the salt at 5685 feet.

In the Huffman area, J. C. Wynne & W. E. Allaun's S. & H. Royalty Company 1, J. H. Isabell survey, has been abandoned at 8510 feet.

Wharton County: H. S. Snowden's H. C. Cockburn 2, Frio sand opener in the Lane City field, flowed 85 barrels of oil daily through a 3/16-inch choke from perforations at 5433-37 feet. Gas-oil ratio was 270/1. This is the first Frio sand production for the field.

Trinity County: Magnolia's Bolton 2, wildcat on the Glendale prospect, was drilling below 11,045 feet in lime. The same operator's Oscar Gibson 1, Sanchez survey, was drilling below 3135 feet in shale.

Matagorda County: Superior and John H. Blaffer have staked W. J. Bulbertson 1 about a mile northeast of their Fendell B. Peterson 1, Sugar Valley condensate discovery well. The new test is in the P. Burnett and A. S. Sojourner survey. The field was opened in June, 1943, and the Peterson 1 was completed at 9754-59 feet for 154 barrels of 53-gravity condensate and an estimated 5 million cubic feet of gas daily.

Brazoria County: Glenn H. McCarthy has staked Frank K. Stevens et al as an 11,500-foot wildcat northwest of the Blue Lake field. It is on a 208-acre tract in the George Robinson survey.

Newton County: Humble's E. C. Hankamer 1, Smyth survey, prospective condensate field discovery well in the South Call area, was still delayed with stuck pipe at 7900 feet.

Lacy Buys Production

Rogers Lacy, Longview operator, has acquired a one-fourth interest in the Jefferson Oil & Gasoline Company of Jefferson, Texas, for a reported consideration of $50,000.

The company is actively engaged in the development of Travis Peak production in the Jefferson area, Marion County, East Texas. Two wells have been completed for a total of 475 barrels of oil and a third now is being drilled on the company's 5000-acre block.

TRETOLITE SERVICE STARTS.....

when the Tretolite Field Engineer goes on the job

A phone call brings the local Tretolite field representative to your lease immediately. He helps you solve your crude oil emulsion problems quickly and accurately . . . chooses a formula that will do the job right—right on the job. However, Tretolite service does not stop then. Our field engineer makes frequent call-backs to check the efficiency of the Tret-O-lite formula you are using and to help you to maintain and possibly increase the economy and effectiveness of your dehydrating operations.

Tret-O-lite

REG. U. S. PAT. OFF.

DEHYDRATING **DESALTING**

TRETOLITE COMPANY *Manufacturing Chemists*

Webster Groves, St. Louis County, Mo., Los Angeles, Calif.

Complete Service for Every Field

☆ South Louisiana

Oil, Gas Shows Reported In Allen Parish Wildcat

Oil and gas shows reported in Allen Parish wildcat; pipe set in Jefferson Davis Parish wildcat; deep Rapides Parish well is spudded.

Allen Parish: Humble Oil & Refining Company's Mrs. J. A. Bel Estate 1, 33-5s-4w, wildcat in the Oberlin area, is coring below 13,400 feet in hard shale. A 30-foot gas section was reported cored at 12,200-230 feet. A slight show of oil was logged in a sandy shale section at 12,106-115 feet.

Jefferson Davis Parish: Sohio Petroleum Company's Claudius Fontenot 1, 15-10s-6w, wildcat in the Iowa Junction area, is drilling plug after setting casing at 8908 feet, total depth.

Barnsdall Oil Company's Miller 9, West Tepetate field, is reported being abandoned at 8560 feet after a test at 8380-81½ feet failed.

Jefferson Parish: The Texas Company's State 1, wildcat in East Barataria Bay, T-20s-24e, was bottomed at 14,477 feet after running an electrical log. This is the deepest active test on the coast.

Rapides Parish: Union Producing Company's Belgrade 1, 14-4n-3e, wildcat test in the Big Island area, has spudded and is drilling below surface casing at 2219 feet.

Assumption Parish: Falcon Seaboard Drilling Company's Edward Hebert 1, Napoleonville area, set 7-inch protection casing at 6510 feet and is drilling deeper below 6790 feet in sand and shale.

St. Charles Parish: Humble Oil & Refining Company's Sarpy Brothers 1, Good Hope field, has been completed for 346 barrels of 36.2-gravity oil daily through a 3/16-inch choke from perforations at 7795-7812 feet.

Calcasieu Parish: Union Sulphur Company is moving in material for Bordages 1, 2-10s-9w, Hackberry sand test in the Lake Charles area.

In the Lockport field, Magnolia Petroleum Company's Vincent-State Unit 1 is being abandoned at total depth of 8070 feet after failing on a series of completion attempts.

Iberville Parish: T. G. Markley & Crosby Drilling Corporation's Baist Cooperage Lumber Company 11, Bayou Blue field, is a failure at 7369 feet.

Beauregard Parish: Magnolia's Musser-Davis 2, Oretta field, has been completed for 227 barrels of oil daily through a 12/64-inch choke from perforations at 8696-8701 feet. Tubing pressure was 2200 pounds with the gas-oil ratio being 6436/1.

Colonel White to Head AGA Promotion Office

Appointment of Colonel John H. White, Jr., of Rochester, New York, as director of the newly-established promotional bureau of the American Gas Association has been announced by D. A. Hulcy, chairman of the promotional committee. Colonel White who has been on active duty since February 1942 will join the association's headquarters staff in New York December 1.

The function of the bureau is to develop and conduct industry-wide sales promotional programs.

If All Wells

. . . for which we have furnished supplies and equipment in the past 37 years were closed down today, it would make front page news along with CIO strikes. Which makes us glad we vend good, dependable stuff. And that, in turn, is a nice commentary on the buying habits of men who TRY PELCO FIRST.

WE'VE SUPPLIED OIL MEN IN OUR AREA FOR 37 YEARS

PELICAN WELL TOOL & SUPPLY CO.

SHREVEPORT LOUISIANA

PELCO

Berwick
New Iberia
Lake Charles

☆ North Louisiana

Claiborne, Caddo Parishes May Get Pettit Production

Pettit lime production in Claiborne and Caddo parishes indicated; new Franklin oil discovery testing; second Tremont test completed.

Claiborne Parish: A new Pettit lime oil field in the Athens area was indicated at Skelly Oil Company's J. G. Dance 1, NE SW 31-20n-6w. During a 10-hour test the well flowed 156 barrels of 32-gravity oil through ¼-inch choke from 48 shots opposite the Pettit at 6034-46 feet, acidized with 5000 gallons of acid. This was an old test abandoned in June, 1941, at 6708 feet. Operators plugged back to 6510 feet, perforated with 4 shots at 6020 feet above the Pettit and 4 at 6060 feet below the Pettit, and squeezed to insure shutoff from other horizons.

H. C. Owens' wildcat, Thomas Crichton 1, NE 1-20n-8w, Homer area, was abandoned at 7015 feet in the Cotton Valley without reporting any promising shows of oil or gas.

Caddo Parish: Pettit lime production seemed possible at Union Producing Company's Noel Estate 1-A, 11-19n-16w, wildcat south of the shallow Caddo field and northwest of the Longwood field. A 20-minute drill-stem test of the Pettit from 5701-16 feet, using ¼-inch top and bottom chokes recovered 120 feet of oil, 50 feet of basic sediment and drilling mud with 10 feet of salty water in the bottom. Drilling was resumed below 5755 feet, and plans were to go to the Travis Peak before making production test of the Pettit.

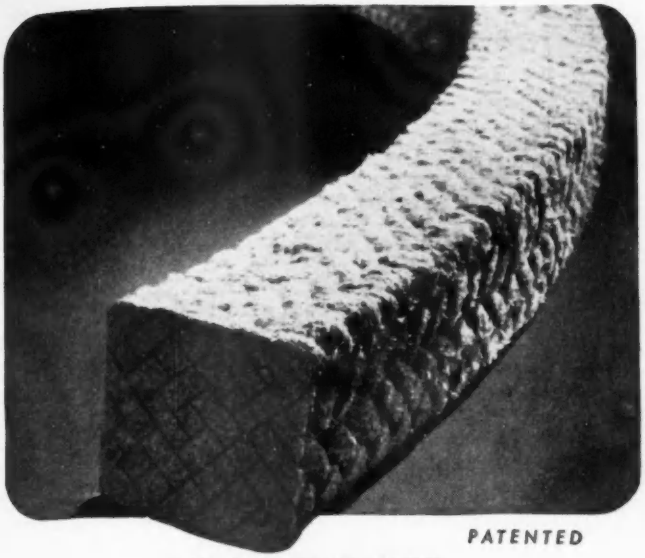
Franklin Parish: C. H. Sharp's Baker 1, C SE SE 27-16n-9e, which has opened oil production 6 miles south of Delhi, was at a total depth of 5864 feet in the Glen Rose and preparing to run production test. A drill-stem test of 8 shots from 4900-08 feet in the Massive Tuscaloosa sand flowed 8 barrels per hour, under tubing pressure of 1200 pounds. O. G. Collins' Baker 1, NW NE 26-16n-9e, was abandoned at 7193 feet without shows.

Gus K. Primos and C. W. Sharp staked Butler 1, C SW NW 20-16n-8e, as a Tuscaloosa wildcat test.

Bienville Parish: The Ohio Oil Company's Crow 1, 32-17n-7w, Sailes field, flowed 1,820,000 cubic feet of gas per day during initial test, indicating the first Travis Peak production for the area. Other tests will be made of 104 perforations from 7535-48 feet. Total depth is 7689 feet with 5½-inch casing cemented on bottom.

Bossier Parish: G. H. Vaughn perforated with 228 shots from 8012-50 feet in the Cotton Valley "D" sand and ran tubing with packer to test both "D" and Bodcaw sands in Katie Odom Padgett 1, C SW NE 1-20n-13w, 1½-mile extension to the Benton field, and first oil producer for the area. Previously, the well had tested 290 barrels of 45.3-gravity oil per day through 24 perforations from 8140-46 feet in the Bobcaw.

Barnsdall Oil Company and Sohio Petroleum Company cored from 3315-25 feet in Crystal Oil Refining Company 1, 28-21n-11w, Ivan sector, and recovered



PATENTED

GARLOCK
LATTICE-BRAID PACKING
Lasts Longer!

The unique structural design of Garlock LATTICE-BRAID holds the strands together even when the packing is worn far beyond the serviceable limits of wear of ordinary braided packings.

This same "lattice" braiding provides unusual flexibility and semi-automatic pressure action.

Garlock LATTICE-BRAID packing is furnished in several styles for various types of service. Write for illustrated descriptive folder.

Garlock 731 Lattice-Braid Coil

THE GARLOCK PACKING CO., PALMYRA, N. Y.
Tulsa, Okla. Houston, Texas
Los Angeles, Calif.

GARLOCK

YOU CAN REAM YOUR PIPE
More quickly and Easily
with the Extra-Long-Taper
RIDGID REAMER

It won't thin, flare or split pipe

● You ream the burr from any pipe in no time at all with a few easy feather-light ratcheted strokes of this RIDGID Reamer—and without damaging the pipe. The extra long taper of this unusual tool prevents thinning, splitting or flaring of pipe or conduit wall. It saves you time, work—and pipe! It comes complete with ratchet handle—or reamer unit alone fits your RIDGID 00R handle. Ask your Supply House for this handy RIDGID.

RIDGID
WORK-SAVER PIPE TOOLS
THE RIDGE TOOL COMPANY • ELYRIA, OHIO, U. S. A.

sand without shows. The test is scheduled for 9000 feet or the Cotton Valley.

Lincoln Parish: The California Company's W. W. Morris 1, 13-18n-1w, second test in the Tremont field, was completed for flowing gauge of 55 barrels of distillate and 40 barrels of salt water through 14/64-inch choke, and an estimated 2,685,000 cubic feet of gas per day. Total depth is 9490 feet. Production is from perforations opposite 9170-96 feet.

Indian Leases Offered

A public auction of Osage Indian oil leases will be held December 5, at the Osage Auditorium, Pawhuska, Oklahoma. Leases offered total 11,840 acres, including 54 tracts on the east and 20 tracts on the west side of the county.

☆ Arkansas

Strong Field Test Opens Cotton Valley Production

Cotton Valley production opened by Strong field's second producer; White County wildcat fails; new wildcat gets under way in Drew County.

Union County: Brown & Wheeler completed C. Clark 1, C SW SW 2-18s-12w, second well in the Strong field and first Cotton Valley producer, as a pumper, making 60 barrels of oil in 24 hours. The well is producing through 24 perforations from 4817-22 feet. It was plugged back to the Cotton Valley after being drilled to 6350 feet in Smackover lime, which tested only salt water. Root Petroleum Company's discovery, Union Saw Mill 1, C NW NW 27-18s-12w, produces from the Smackover at 6320-30 feet. No test was made of the Cotton Valley section.

The Atlantic Refining Company's wildcat, Goode 1, 6-17s-13w, is drilling below 3370 feet, logging base of Chalk at 2492 feet.

White County: Lion Oil Company's Nalley 1, C SE NE 33-8n-7w, Searcy area, was abandoned at 6397 feet in the Ordovician. This deep wildcat, like several others previously drilled, missed the Wilcox.

Columbia County: Blaine Dunbar et al's Reed & Biddle 1, 34-19s-20w, Haynesville field, tested a good flow of 415 barrels of oil in 9 hours through ¾-inch choke on tubing. Production is from the Pettit lime at 6510-22 feet. Porosity was topped at 5606 feet and based at 5626 feet. Total depth is 5716 feet.

Ouachita County: Grady H. Vaughn's A. B. Turner 1, C SE SW NW 27-15s-18w, Gum Creek field, pumped 60 barrels of oil in 24 hours through 18 perforations from 2480-84 feet. Total depth is 4005 feet.

Drew County: C. A. Kinard is preparing to move in materials for McCauley 1, C NE SW 14-12s-6w, new wildcat. The test is to be drilled to the Paleozoic.

Oklahoma Abandonments

A total of 118 wells were abandoned as dry holes or exhausted oil and gas wells in Oklahoma from September 24 to October 26.

☆ Michigan

Deep River Field Is Given An Extension of ½ Mile

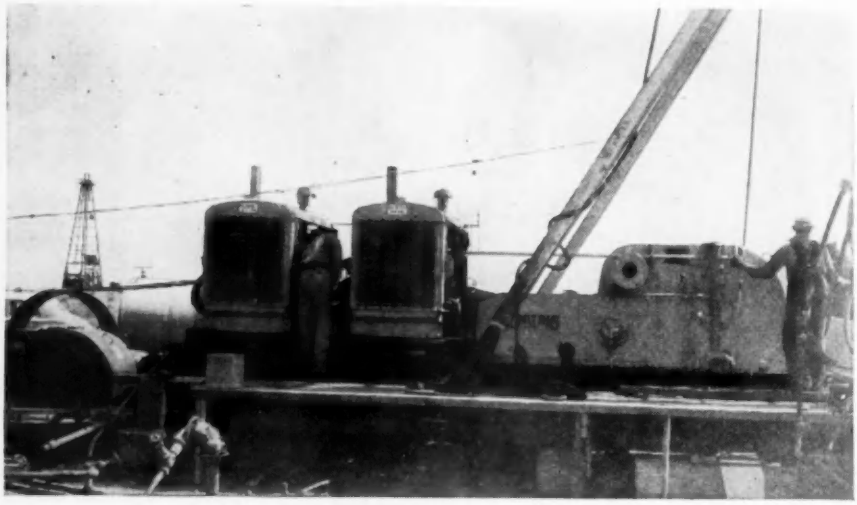
Deep River field extended ½ mile southeast; new shallow pool is indicated in Kent County; Osceola outpost may prove Stray sand gas pool opener.

Arenac County: American Drilling Company and Michigan Oil Company's Bradley 1, NW NE NE 23-19n-4e, ½ mile southeast of the Deep River pool, flowed 100 barrels oil per hour natural from top Dundee lime pay at 2716-23 feet. Since discovery in January, 1944, the field has been extended nearly 5 miles southeast but it is productive on a strip averaging less than ½ mile wide.

Kent County: Byron MacCallum's Green 1, N½ SW NW 27-10n-12w, Tyrone Township, is under test after making 2 or more ungauged flows from a Traverse lime pay logged at 2367-83 feet. Water from upper formations prevented an early test. The wildcat is 18 miles north of the old Grand Rapids field.

Osceola County: Sohio Petroleum Company logged an estimated 800,000 cubic feet of gas in the Stray sand at unreported depth in a wildcat in 13-17n-7w, Orient Township, about 4 miles north of the East Fork gas field.

Isabella County: Sohio's Brassington 1, SE NW SW 25-16n-5w, first Dundee test on a closely watched core-high, logged objective at 3910 feet and was still drilling at 4006 feet, carrying a light show of water.



KELLY PICKS MURPHY FOR *Dependability*

POWERING this Model U-10 "UNIT" Rotary Drilling Rig, owned by W. D. Kelly Drilling Company, Pampa, Texas, are two rugged, compact MURPHY DIESEL engines . . . Model ME-66, 6 x 6½", 6-cylinder, 150 HP continuous, 180 HP intermittent full Diesel engines, compounded for 300 HP continuous, 360 HP intermittent, at 1200 rpm.

Their relatively light weight and compactness make these engines ideal for portable oil field equipment. Their ruggedness, flexibility and reserve power, economy of operation and long-life dependability mean more power, more profit wherever drilling, pipe line and producing-work calls for power in oil field operations. . . . Write for bulletin.

Buy Victory Bonds

More Power

MURPHY DIESEL

Reg. U.S. Pat. Off.

More Profit

MURPHY DIESEL COMPANY
5313 W. BURNHAM ST., MILWAUKEE 14, WIS.
TULSA BRANCH: 416 S. Detroit Ave., Tulsa 3, Okla.

Engines: FROM 90 to 215 HP
Generators: FROM 60 to 115 KW

"FIELD-PROVEN *Power*"

219A

"Standardize on Standard

8 BIG STORES CONVENIENTLY LOCATED

STANDARD was a pioneer in servicing the oil industry in South Louisiana. 8 big stores, completely stocked with the finest drilling and production equipment, are stategically located with respect to the active fields in this area . . .

Now comes the development of South Mississippi and you will find STANDARD on the ground, offering the same service that has earned the good will of operators in South Louisiana . . .

Natchez has been selected as the location of our 8th branch store. Here you will find the most complete stock of drilling equipment and here you will receive the same co-operation and assistance in your production problems that have always characterized STANDARD service.

Distributing the Products of These Leading Manufacturers:

National Tube Co.
Republic Steel Corp.
Hughes Tool Co.
Reed Roller Bit Co.
Cameron Iron Works
Wickwire Spencer Steel Co.
Whitlock Cordage Co.
The Lunkenheimer Co.
Edward Valve & Mfg. Co.
Hewitt Rubber Corp.
Bariod Sales Division
Stockham Pipe Fittings Co.
Baldwin-Duckworth Chain Corp.
Link-Belt Co.
Merco Nordstrom Valve Co.
National Transit Pump & Machine Co.
Taylor Forge & Pipe Works
Phelan Faust Paint Co.
A. C. Horn Co.
and others.

Standard

SUPPLY AND HARDWARE COMPANY

New Orleans, Louisiana

Branches—Lake Charles, New Iberia, Leeville, Houma, Harvey and Baton Rouge, La; Natchez, Miss.
Sales Offices—Houston, Texas, 617 Second National Bank Bldg.; Dallas, Texas, 1214 Praetorian Bldg.
Mud and Cement Warehouse: Lockport, Louisiana.

☆ Illinois Basin

South Extension Is Given Mattoon Pool, Illinois

Mattoon pool, Illinois, gets south extension; 3 other wildcats in area showing as possible producers; Wayne County has discovery; pipe set for production test in Gibson County, Indiana, wildcat.

The Mattoon pool, Coles County, was given a 2-mile south extension when Victor Scheef's Bresee 1, NE NE SE 15-11n-7e, swabbed 10 to 12 barrels of oil and no water per hour from Aux Vases sand, to surpass expectations of operators.

Three other wildcats in the area were showing as possible producers. B. A. Baker's Bates 1, SW NW NW 12-12n-7e, a mile east of M. H. Richardson's Powell 1, which extended the pool 2 miles north, was at total depth of 1980 feet and preparing to test 6 feet of tight saturation in the Aux Vases sand. Witt and Schuler's Hart 1, NE NW SW 27-12n-7e, ⅜-miles southwest of production, was preparing to set casing for an Aux Vases test. Leland Waggoner's Parker 1, NE NE SW 27-11n-7e, was showing as a small producer in the Aux Vases for an extension of the pool.

Wayne County: Bell Brothers and N. V. Duncan's Leach 1, C N½ NW SE 9-2s-9e, 3 miles north of the Golden Gate pool, was a discovery in the McCloskey lime at 3305-10 and 3330-35 feet. It swabbed and flowed 65 barrels of oil, natural, in 24 hours and after 5000 gallons of acid made 180 barrels in 24 hours.

Another Wayne County discovery was Sam Jarvis and J. Gilliam's Borah 1, SW SW SW 3-1s-8e, completed in Aux Vases sand at 3080-90 feet for initial production of 40 barrels per day on pump.

Effingham County: Ashland Oil Company has opened a new area north of Bible Grove pool at Woody Heirs 1, SW SW NE 31-6n-7e. The well swabbed 15 barrels of oil per hour from McCloskey lime at 2844 feet.

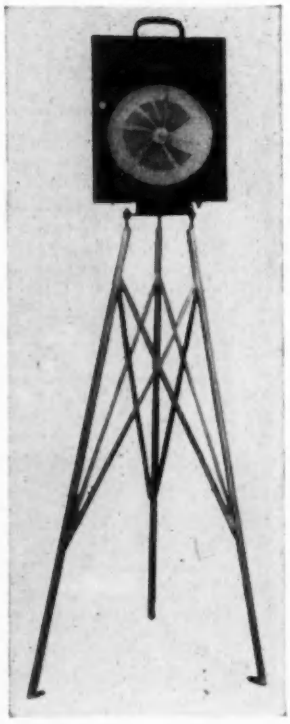
Indiana

Magnolia Petroleum Company's Dike 1, C of SW 25-2s-13w, Gibson County, 3 miles east of the Griffin-Keensburg pool, has set pipe for production test of Aux Vases sand at 2655-60 feet. The well swabbed 240 barrels of oil in 24 hours, natural, through casing perforations.

Ryan Oil Company's Putnam 1, NE NE NW 26-1s-12w, 1½ miles east of the Mt. Carmel pool of Illinois, pumped 50 barrels of oil in 6 hours from Hardinsburg sand at 1790-1800 feet.

LOWER MUD COSTS . . . BLOWOUT PROTECTION

. . . . with the "Mud-O-Graf"



The condition of mud in the hole is recorded automatically during every minute of drilling operations. With this information, constantly before the mud engineer, he can easily maintain a uniform weight and viscosity. He can instantly detect weight variations of less than 1/10th pound per gallon, the presence of gassy streaks, their volume and frequency of occurrence.

The Mud-O-Graf eliminates the usual trial and error method of adding weighting material, chemicals or water to maintain the correct specific gravity and viscosity of the mud. The danger of blowouts, due to variations in mud conditions, is minimized or eliminated because such variations are promptly and accurately revealed for immediate correction.

The Mud-O-Graf has been proven by scores of field operations during the past five years under greatly varying drilling conditions and with various types of muds.

HERE'S WHAT THE "MUD-O-GRAF" DOES FOR YOU

1. Automatically and successively records the weight and viscosity of an average sample of mud.
2. Indicates graphically any heavy or light streaks.
3. Eliminates guess-work in use of weighting material, chemicals and water.
4. Shows the duration and the relative amount of gas in gassy streaks in the mud.
5. Enables the crews to know when they can pull a dry string of drill pipe.
6. Indicates drilling speed, and time required for all other drilling operations.
7. Shows the time of a complete circulation.
8. Indicates approximately how often the hole is filled up when making a trip.
9. Gives to the tool pusher or crew coming on tour a graphic picture of preceding operations.

WARREN AUTOMATIC TOOL CO.

1920 HUSSION **HOUSTON, TEXAS**

☆ Mississippi

Clarke Receives Discovery; Baxterville Has Extension

Clarke County has discovery; Baxterville extension completed; another producer assured for East Heidelberg field; Hub field well records slight shows.

Clarke County: L. J. Rousel's Long Bell Petroleum Company 1, SE SW 10-2n-16e, 5 miles east and 1 mile south of Quitman, has been confirmed as a discovery with an initial production of 85 barrels of heavy black oil per day. The well was drilled to 3808 feet and casing perforated with 14 shots between 3715-17 feet in the Eutaw zone. Production came in on the pump, and is from the same levels and stratum as that in the Langsdale field several miles away. Langsdale oil tests approximately 20 gravity, whereas the discovery fluid shows only 13.6 gravity. In the Langsdale field T. J. Conway Drilling Company's Pippen 1, SW SW NW 29-1n-18e, is on the verge of completion as another good producer. Casing was perforated at 3738-56 and 3776-94 feet and the well swabbed in. Pump was being installed. H. L. Hunt's Long Bell Petroleum Company 1, NW NW SW 29-1n-18e, is preparing to test after reaching a total depth of 3788 feet in the producing zone of the Eutaw.

Lamar County: The Superior Oil Company's R. Batson 4, SEc SW NW 20-1n-16w, Baxterville area, has been completed to extend the field a mile south. On recent test the well flowed 388 barrels of 14.5-gravity oil per day. Production is from the lower levels of the Tuscaloosa at 8806-18 feet. Gulf Refining Company's J. M. Andrews 2, SEc 6-1n-18w, Baxterville, is waiting on cement after running casing to 8939 feet.

Jasper County: Sun Oil Company's Eva Ross 1, NE SE SE 13-1n-12e, East Heidelberg field, is installing pump after successful production test of the Eutaw horizon. In a 15-minute drill-stem test at 5018-38 feet, 945 feet of oil were recovered. In a subsequent test casing was perforated at 4998-5019 and 5023-35

General Offices:
120 Broadway, New York

AMERADA PETROLEUM CORPORATION

Beacon Building
Tulsa, Oklahoma

EQUIPMENT IN
WORLD-WIDE USE
COMPLETE FIELD EQUIPMENT FOR SEISMIC EXPLORATION
One purchase order obtains the finest and most complete Seismograph Equipment in the World. This is a turn-key service which offers unified equipment designed to operate as a team. E. L. I. experience in operation and manufacture of Seismograph Equipment dominates the field.
RECORDING TRUCKS 12—16—18 or 24 TRACES
SHOOTING TRUCKS • DRILL TRUCKS • WATER TRUCKS
DYNAMITE TRAILERS AND A FULL LINE OF RELATED FIELD AND LABORATORY EQUIPMENT
Write for Catalogs
EXPLOSIVES
EXPLOSIVES
Engineering Laboratories, Inc.
CONSULTING ENGINEERS & MANUFACTURERS
602-624 East Fourth Street
Tulsa 3, Oklahoma, U. S. A.

feet and well swabbed in. Lyons & Prentiss' C. B. Culpepper 1, SWc NE SE 13-1n-12e, East Heidelberg, continues to test after well flowed oil in drill-stem test at 5036-42 feet. Skelly Oil Company's B. A. Rowell 1, NEc SW NE, is testing the Eutaw zone below 4996 feet with no shows. C. E. Walters' D. C. King 1, wildcat in 30-1n-12e, has reached 6275 feet with no shows.

Marion County: Humble's E. O. Ball 1, SWc 17-2n-14e, Hub field, has reached 8121 feet. Slight shows have been reported in the 8000-foot zone with cores taken at 8056-69 feet showing sand with gas odor. Superior's R. Batson 5, NEc SW SE 12-1n-17w, is preparing to spud in an attempt to extend the Baxterville field across the line into Marion County.

Madison County: The Carter Oil Company's Agnes Anderson 1, NE NW SW 11-11n-3e, Pickens field, has been successfully completed with an initial production of 173 barrels of oil per day. The well probably will be worked over, as salt water production ran rather high in the first test. Production is from the Eutaw horizon between 4847-71 feet. Sohio Petroleum Company's Mrs. O. K. Andrews 1, SEc NE SW 11-9n-1w, wildcat, is drilling below 6653 feet with no shows. Eutaw was topped at 5868 feet but cores taken at 5880-5935 feet recovered only sandy shale and sand with considerable salt water content.

Newton County: Sun's Citizens National Bank 1, C SW NE 23-5n-13e, wildcat, is bottomed at 8340 feet with no shows indicated. Electrical log has been run and preparations are being made for a drill-stem test.

AMERICAN ROLLER BEARINGS of all types are built specifically to "bear up" under the terrific stresses and strains encountered in the world's most powerful industrial and oil country machinery. Their superior strength, long life and proven ability to render smooth, quiet, trouble-free service has made them favorites with heavy equipment manufacturers for more than 25 years.

Why don't *you* specify AMERICANS for your next *heavy-duty* application? Our engineers will gladly cooperate in solving all your roller bearing problems.

AMERICAN ROLLER BEARING COMPANY

PITTSBURGH, PA.

Pacific Coast Office: 1718 S. Flower St., Los Angeles, California.

AMERICAN *Heavy-Duty* **ROLLER BEARINGS**

AMERICAN ROLLER BEARINGS HEAVY DUTY

☆ Alabama

Gilbertown Extension Test Has Show of Oil in Chalk

Gilbertown extension test has show of oil in Chalk; 2 wildcats starting in Mobile and Wilcox counties; 1 staked in Talladega County.

Choctaw County: The Carter Oil Company's Sam Allman Unit 2-1, SW SW NE 5-10n-3w, Gilbertown extension area, swabbed oil from the Chalk zone at 2586 feet. A 1-hour drill stem test from 2609-2880 feet recovered only salt water. Operators are drilling.

Clarke County: Danciger Oil & Refining Company's State of Alamaba 1, SE NW 21-5n-2e, tested the Eutaw horizon below 2500 feet without finding any shows. Drilling is now below 3192 feet in black shale.

Mobile County: True Cauble's Boykin 1, NE SE 25-2n-1e, wildcat, is drilling below 6692 feet without shows. Wilcox was topped at 1950 feet. Salt Mountain lime at 5345 feet.

Danciger Oil & Refining has completed derrick for William R. Giesler 1, C NE SW 8-4s-2w, new 6000-foot or deeper wildcat 8 miles west and north of Mobile.

Talladega County: C. L. Collins' Ben E. Lamb 1, SE NW 11-19s-3e, another new wildcat, will be a 1000-foot cable test.

Wilcox County: Seaboard Oil Company of Delaware spudded S. M. McConnico 1, 32-13n-10e, set surface pipe and is waiting on cement at 1062 feet.

Florida

Humble Oil & Refining Company's deep wildcat G. C. Carleton 1, C SW NE 34-38s-29e, Highlands County, is drilling below 12,068 feet in hard dolomite with no shows reported. Last drill-stem test was taken at 10,659-78 feet and recovered only mud and salt water.

Charlotte County: Humble's Lownes-Treadwell 1-A, C SW NE 17-42s-23e, is drilling below 11,971 feet with no shows reported.

Collier County: Humble is rigging up in the Sunniland field at Gulf Coast Realties 6, C SW NE 19-48s-30e.

Monroe County: Gulf Refining Company's J. P. Scranton 1, 2-67s-29e, is rigging up rotary.

Hernando County: The Ohio Oil Company set conductor pipe and is moving in big rig for deep test at Hernasco Corporation 1, 19-23s-18e, 11 miles southwest of Brooksville.

Lafayette County: Sun Oil Company's wildcat Crapps 1, C SW NE 25-6s-12e, is building derrick.

Georgia

Kerlyn Oil Company is moving in rig to begin operations at Cecil Pate 1, C SE¼ Lot 144, 13th Land District, Crisp County. Kerlyn is receiving support from other companies through purchase of spreads of acreage.

Gas Convention Set

The annual convention of the Southern Gas Association will be held March 21-22, 1946, in Galveston. The association will expand its activities during the coming year and plans employment of a full-time managing director.

• *Basic*

HEADQUARTERS for OIL WELL *Chemicals!*

VALOSA PHOSPHATES ***(All types)***

QUEBRACHO

BARIUM SULPHATE

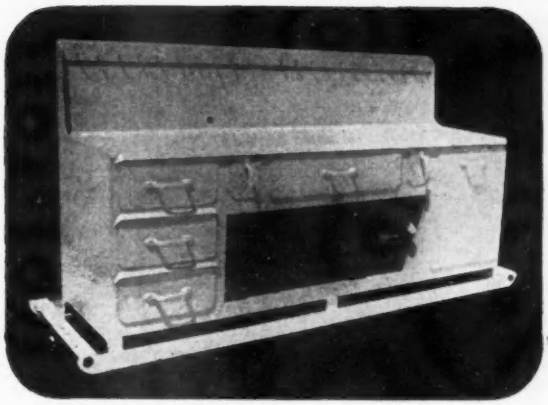
SILICATES

SPECIAL GUMS

• Inquire direct or through your dealer.

THOMPSON-HAYWARD CHEMICAL CO.

HOUSTON NEW ORLEANS DALLAS TULSA SAN ANTONIO
OKLAHOMA CITY WICHITA



The Industry's Finest
WORK BENCH

The Owen Tool Chest and Work Bench is standard equipment on modern drilling rigs. Built of 3/16" steel, welded throughout and mounted on skids, it is very sturdy . . . will withstand many moves and hard use. The roller mounted drawers have a central locking system. Rain hood over each drawer protects tools against rain damage. Sturdy vise stand conveniently located.

Dimensions: back height 4½'; front height 32"; depth 30"; length 8'; approximate weight 1100 lbs.

OWEN TOOL COMPANY
ROUTE 9 BOX 800-B V-2-4341
HOUSTON, TEXAS

EXNER-DODGE

Underset

FORMATION PACKERS

Hook Wall Type Packer that "Hangs in the Casing; Packs in the Formation." Designed to fill a specific need that no other packer can successfully meet.

1 Position in well can be changed, at will, after setting and without removing from well.

2 The perfect packer for controlling gas-oil ratio or bottom hole water.

3 Used in any installation where exact position of packer is important and must be determined by trial.

4 Equipped with EXNER-DODGE free releasing slip mechanism.

5 Rugged construction throughout and furnished exclusively with Neoprene Packing Elements for high pressure work.

Thoroughly proven through years of successful service. To avoid packer trouble, specify EXNER-DODGE PACKERS.

OTHER POPULAR EXNER-DODGE PRODUCTS

BULL PLUGS • SWAGED NIPPLES
CASING NIPPLES • SUB TUBING NIPPLES • SUB TUBING COUPLINGS
PUP JOINTS

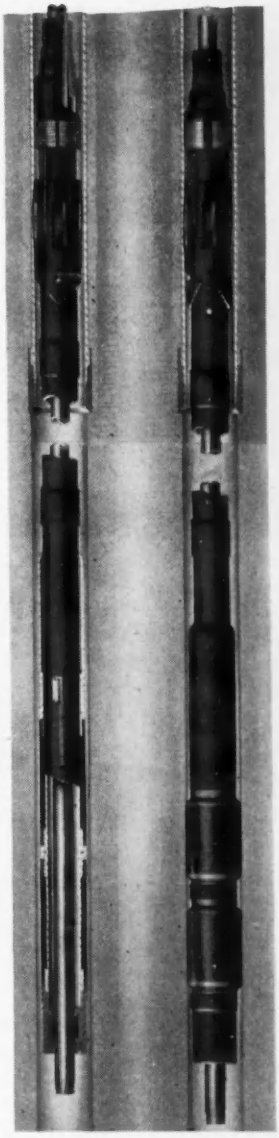
Sold Through Supply Companies

Representative:

THE BRANDON COMPANY,
ODESSA, TEXAS

Stocks at Odessa, Houston, and Kilgore, Texas

WRITE FOR CATALOG



Before Setting — After Setting

(Formerly, THE EXNER-DODGE PACKER COMPANY)

Exner-Dodge, INC.

FOURTH AND SANTA FE — E-D — TELEPHONE 313

COFFEYVILLE, KANSAS

ACCURATE...
PROMPT...
Analyses of Oils and Gases
General Chemical Analyses
Tests and Inspections of Materials
Including
Podbielniak Analyses
Crude Oil Evaluations
Wax Determinations
SHILSTONE
TESTING LABORATORY, Inc.
Established for 35 years.
HOUSTON
301 M & M Bldg., Fairfax 4139
2817 W. Dallas, Hadley 7726
NEW ORLEANS
510 Gravier St.
Raymond 2040
CORPUS CHRISTI
615 Old Robstown Rd.
Phone 9907

ALTEN
Screw Type
STUFFING BOX
CASING HEAD
ONE OF OVER 300
ALTEN OIL FIELD
PRODUCTS

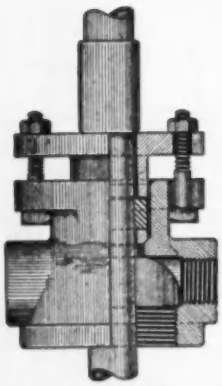



Fig. A-106
See Composite Catalog for complete list or write us for catalog.
ALTEN'S
FOUNDRY and MACHINE WORKS
Established 1889 . . . . . Lancaster, Ohio
EXPORT OFFICE:
342 Madison Ave.,
New York 17, New York
TEXAS OFFICE:
45 San Jacinto St.,
Houston 1, Texas
Leading Supply Stores Carry All Alten Oil Field Equipment

☆ California

Gardena Wildcat Reported Flowing 250-300 Barrels

Gardena wildcat near Los Angeles reported flowing 250 to 300 barrels by heads; drilling activity increasing in Cymric area in Kern County due to deep sand discovery; Standard of California testing uphole showings in Lost Hills deep test; Superior drills 5539 feet and sets pipe in 4 days and 3 hours in Paloma well.

Los Angeles County: Hope revived that The Ohio Oil Company had overcome mechanical trouble in its Gardena wildcat, Gardena Community 1 in 24-3s-14w, when it was reported that the well was flowing by heads 250 to 300 barrels of 28-gravity oil, no water but some mud. Operator has been releasing no information and the interval being tested has not been disclosed. Total depth is 10,594 feet with 7-inch casing cemented at 10,353 feet. Previous tests indicated Ohio had discovered a new field and if unable to complete the present well a second would be drilled.

Seaboard Oil Company has stopped the drill at 7505 feet in Los Anegeles Brick 1 near downtown Los Angeles and is making routine tests of showings logged uphole. A test of intervals 5340-30, 5300-5290, and 5240-5220 feet recovered mud. Operator will plug and also test between 1700 and 1850 feet.

General Petroleum Corporation is setting a protection string on bottom in its Buena Park deep test, Librown 1 in 21-3s-11w. Total depth is 12,045 feet.

O'Kane & Brain's wildcat in the Castaic area, Barnsdall 1 in 17-5n-16w, has failed to show anything on production tests. Well was gun-perforated between 1650 and 1710 feet and bailed only water. Another interval tested also recovered water.

Kern County: Independent Exploration Company's discovery of a new producing zone north of present production in the Cymric field has resulted in several new projects getting under way in the area. Independent Exploration's discovery well, Oceanic 1 in 22-29s-21e, is currently producing 715 barrels of 37.7-gravity oil from 4700 feet through an 18/64-inch choke. Dumm Brothers, Honolulu Oil Corporation, and The Superior Oil Company have staked wells in Sect. 22, and Independent Exploration has spudded Cymric 1 in Sect. 21.

The Texas Company's Western Minerals Fee 1 in the Santiago area, 21-11n-23w, came in for 600 barrels of 19.8-gravity oil. Richfield Oil Corporation's Leutholtz A-3 and Western Gulf's Woodward-U.S.L. 4, both in Sect. 22, missed the sand and have been plugged back to redrill.

Superior is making fast time in drilling Anderson 18-35 in the Paloma field. Well was drilled to 5539 feet and 13⅝-inch casing cemented at 1514 feet in 4 days and 3 hours.

Standard Oil Company of California recovered only salt water on a test of sand at 8645 feet in its Lost Hills deep test, Cahn 58-4 in 4-27s-21e. Well is being cleaned out to retest water shutoff. Total depth is 11,080 feet and operator's probable intention is to abandon the well after tests of the showings encountered on the way down.

Kings County: Kings County Oil Company of Corcoran is preparing to deepen the abandoned Elmer C. von Glahn 1 in 4-23-22. Present depth is 9731 feet. Top of the San Joaquin Clay was logged at 6550 feet, Miocene at about 7620 feet and lower Fruitvale Shale between 8780 and 8850 feet.

Solano County: Lebow and McNee failed to log showings in Peters 1, gas test in 7-5n-1e, but the well will be drilled deeper. Present bottom is 3975 feet.

Ventura County: Volunteer Petroleum Company reported oil showings on the ditch from Hilltop 2 in the Ojai area, 7-4n-21w. Electric log has been run to bottom at 5211 feet and casing may be run for a test.

M. T. Grubb's Snowball 1 in 19-4n-24w swabbed water with some gas from perforations between 4210 and 4350 feet and operations have been suspended. Total depth is 5292 feet.

San Mateo County: E. T. Willard, Trustee, has staked a wildcat at Half Moon Bay in 15-6s-5w.

Alberta Group Elects

All directors were reelected for the 1946 term at the annual meeting of the Alberta Petroleum Association, in Calgary. President is Fred M. Graham. P. F. Shannon and F. F. Reeve were reelected vice presidents; E. W. Kolb, secretary-treasurer; R. A. Brown, Sr., W. H. Jones, J. G. Spratt, Herbert Greenfield, J. O. Galloway, Neil McQueen and A. N. Mackenzie, directors.

☆ Canada

Shell Oil's Jumping Pound Wildcat Is Disappointment

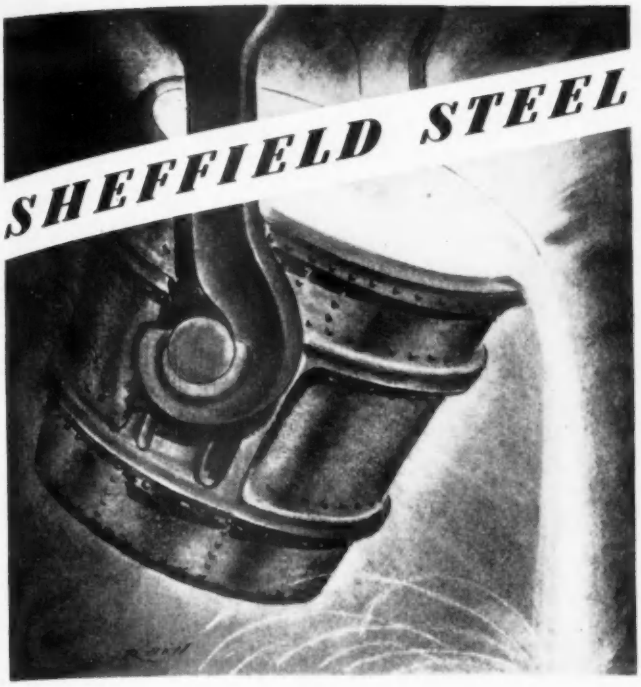
Shell Oil Company of Canada's 10-14-J in 1sd 10 14-25-5w5, West Flank test on the Jumping Pound Anticline, South Alberta Foothills, was a disappointment upon completion.

On a drill-stem test at 10,861 feet, 220 feet in Madison limestone after penetrating a porous section of about 100 feet, the well yielded 107 stands of fluid in 12 hours, including 7 stands of drilling mud, 6 stands of gas-cut mud, 94 stands of salty sulphur water.

The well is ⅝-mile southwest of the wet gas discovery and 1018 feet lower structurally.

Logging within 100 feet of Shell Oil's seismograph estimate, the Home-Brazeau Syndicate 1, Central Alberta Foothills wildcat in 1sd 5 17-43-17w5, was making hole near the base of the Fernie at 9416 feet, with the Madison limestone looked for in another 100 to 140 feet. The key test on a 45-mile long deep-lying Anticline is backed by 6 oil concerns.

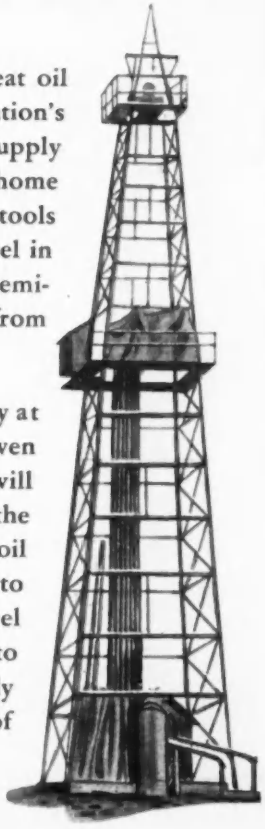
Imperial Oil Ltd. has started the first of 6 deep structure tests east of the Kinsella gas field on the Central Alberta Plains. The well, Imperial-Kinsella No. 1, is in 1sd 11 0-47-9w4. Plans call for drilling to the Viking sand, around 2100 to 2200 feet. The well and those to follow are in an area comprising a dozen townships which have seen no drilling to date, and data obtained will supplement extensive geological and geophysical data already secured by Imperial.



AT-HOME STEEL-MAKING TO SUPPLY OIL INDUSTRY NEEDS

NO LONGER need the great oil fields compete with the nation's other industries for their supply of steel. Available right at home is the steel for structurals, tools and oil field machinery—steel in billets, bars, plates, sheets, semi-finished and finished form, from the mills of Sheffield Steel.

The steel-making capacity at Sheffield Steel is such that even the great backlog demand will not long delay delivery of the vital requirements for the oil industry. This single "Furnace to Finished Product" source of steel supply is strategically located to serve the oil fields economically and efficiently, independent of distant sources.



SHEFFIELD STEEL CORPORATION
SHEFFIELD STEEL OF TEXAS
KANSAS CITY, MISSOURI — HOUSTON, TEXAS
Chicago, Ill. St. Louis, Mo. Des Moines, Ia. Wichita, Kans.
Tulsa, Okla. Oklahoma City, Okla. Dallas, Tex.
Shreveport, La. New Orleans, La. San Antonio, Tex. Denver, Colo.

FROM MULES TO MODERN POWER

Beginning at Petrolia back in 1908 with only a span of mules, our operations during the past thirty-seven years have extended into California, Colorado, Oklahoma, Arkansas, Mississippi, Louisiana, and all of Texas. From Electra, Smackover, Mexia and Burkburnett to the present, our records show more than 2,000 oil and gas wells drilled under every condition. We have helped push derricks higher — and pipe lower, past 12,000-foot levels in the search for crude. We have used everything from the makeshift equipment of other days to our present modern rigs with gasoline, heavy steam, electric and diesel power. The experience we have gained is invaluable and the 250 men in our organization have a knowledge of drilling second to none in the business. We have come a long way in these thirty-seven years and we're proud of our part in helping develop the industry. We look forward to new development with the same anticipation that we had in 1908.

HEAVY STEAM—DIESEL GASOLINE AND ELECTRIC

Al Buchanan
DRILLING CONTRACTOR
SAN ANTONIO, TEXAS

USE
GUARDIAN
Safety Switches
FOR

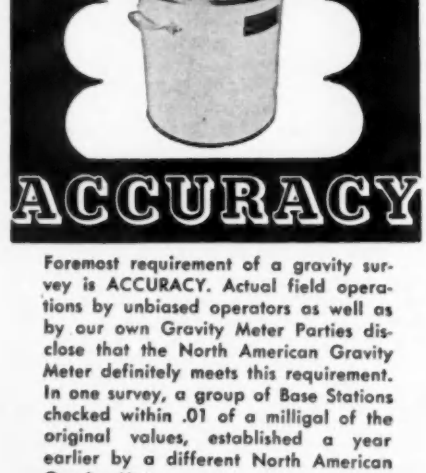
OIL
FIELD
ENGINES

MODEL
SD
Pictured Here

Guardian Safety Switches prevent damage caused by failure of cooling system or oil pressure . . . save down time in repairing or replacing engines. Visible, adjustable silver contacts.

See Your Favorite Supply Store, or Write . . .

FRANK W. MURPHY
Manufacturer
Box 1476 • Tulsa, Oklahoma



ACCURACY

Foremost requirement of a gravity survey is ACCURACY. Actual field operations by unbiased operators as well as by our own Gravity Meter Parties disclose that the North American Gravity Meter definitely meets this requirement. In one survey, a group of Base Stations checked within .01 of a milligal of the original values, established a year earlier by a different North American Gravity Meter.

Many years of experience in the design and construction of gravity meters, their field operation and interpretation of data obtained have led to the development of the present highly accurate North American Gravity Meter.

NORTH AMERICAN
GEOPHYSICAL COMPANY
Gravity . . . Seismic Surveys
Geophysical Apparatus
636 Bankers Mortgage Building
Phone Charter 4-3523 HOUSTON 2, TEXAS

EXPLORATORY COMPLETIONS

ARKANSAS WILDCAT

White County—Failure: Lion Oil Co.'s Nalley 1, se ne 33-8n-7w, base Atoka 3550 ft, Boone 5550 ft, Ordovician 5939 ft, no Wilcox or St. Petersburg, abnd 6397 ft.

CALIFORNIA WILDCATS

Kern County—Failures: Independent Exploration Co.'s Heisen 3, 36-27s-28e, Round Mt. area, Vedder 852 ft, abnd gray sd 858 ft.

Mitchell Co.'s Mitchell Fee 1, 12-28s-19e, Antelope Hills area, abnd 850 ft.

Sacramento County — Failure: Jergins Oil Co.'s Sacramento 1, 23-8n-4e, Sacramento area, abnd 7460 ft.

COLORADO WILDCAT

Rio Blanco County—Oil Discovery: Texas Co.'s U. P. 3-34, sw nw 34-2n-102w, Rangely field area, flow 950-1000 bbls, td 6404 ft.

FLORIDA WILDCAT

Calhoun County—Failure: Pure's St. Andrews Bay Property Co. 2, swc 25-1n-11w, abnd 4457 ft.

ILLINOIS WILDCATS

Bond County—Failure: J. H. Roberts' Hoiles 1, sw nw ne 14-4n-3w, abnd 1169 ft.

Cass County—Failure: Walter Vette's Carls 1, nw se sw 30-18n-11w, abnd 713 ft.

Coles County—Failure: T. Blake Dirickson's Wilson 1, se se se 17-11n-7e, abnd 2421 ft.

Coles County—Oil Discovery: T. Blake Dirickson's Linder 1, ne se nw 27-12n-7e, Aux Vases 1996-2007 ft, pump 209 bbls, td 2007 ft.

Cumberland County—Failure: T. Blake Dirickson's Bingamon 1, sw sw sw 5-10n-7e, abnd 2294 ft.

Jasper County—Failure: J. J. Lynn's McGovern 1, se se se 7-6n-11e, abnd 2770 ft.

Jefferson County—Failure: George et al's Threlkeld et al 1, se sw ne 36-4s-2e, abnd 2985 ft.

Marion County — Failure: Chas. Blakwin's Karwin 1-A, nw nw sw 28-3n-1e, abnd 822 ft.

INDIANA WILDCAT

White County—Failure: Hoffman & Ashland's Dr. Gruner 1, nw nw se 6-6s-10w, abnd 1761 ft.

KANSAS WILDCATS

Barber County—Failures: Alf Landon et al's Hastings 2, nwc 30-30s-14w, abnd 4775 ft.

Skelly's Axline 1, ne ne se 8-31s-11w, Vi 4712 ft, abnd 4735 ft.

Pawnee County—Failure: Huber & Kiowa's Floto 1, ne ne se 18-21s-19w, Arb 4506 ft, abnd 4580 ft.

Riley County—Failure: P. M. Polhamus et al's William Hannan 1, ne nw sw 29-8s-5e, Simp 2675 ft, abnd 2727 ft.

[illegible] County—Failure: Phil Han's Nech 1, sw ne nw 15-9s-19w, Arb 3514 ft, abnd 3543 ft.

Saline County—Failures: Ed Adair's Walden 1, swc 27-13s-2w, Arb 3344 ft, abnd 3354 ft.

Stanolind et al's Thelander 1, c w½ sw ne 22-14s-2w, Arb 3422 ft, abnd 3500 ft.

Sumner County — Failure: Alladdin Pet. Corp.'s Bellman 1, ne ne sw 15-30s-1e, Arb 3820 ft, abnd 3920 ft.

NORTH LOUISIANA WILDCATS

Claiborne Parish—Gas Discovery: Hunt Oil Co.'s W. T. Owens 1, 15-23n-7w, elev 276 ft, base Massive anhy 4120 ft, James 4674 ft, perf in Gloyd 4454-64 ft, test 98% sw, 2% oil, perf 4454-57 ft, swab 58 bbls 43-gr oil in 16 hrs, set plug 4400 ft, perf 4126-36, 4140-50 ft, 3000 gals acid, flow 2 min gas, ⅜-in, gor 18,330/1, td 5520 ft.

De Soto Parish—Gas Discovery: Chas. C. Lowery's Tanner 1, 13-10n-11w, elev 258 ft, Paluxy showing gas and dist 3215-45 ft, perf 3120-40 ft, flow 4 min gas, ⅜-in, tp 1150 lbs, td 3305 ft.

Madison Parish — Failure: Sohio's Kathan-Johnson 1, 31-18n-11e, Wilcox 1735 ft, Midway 2755 ft, Clayton 3130 ft, Gas Rock 3162-80 ft, Glen Rose 3180 ft, abnd 4050 ft.

NORTH LOUISIANA OUTPOST

Bossier Parish—Benton Extension: Barnsdall-Sohio's Padgett-Bundy 1, c nw se 17-20n-12w, elev 296 ft, Tokio 2440 ft, Paluxy 2890 ft, massive anhy 4285 ft, James 5010 ft, Pettit 5385 ft, Travis Peak 5655 ft, Cotton Valley 7624 ft, "D" sd 8070 ft, Rodcaw 8182 ft, perf 168 shots 8072-8110 ft, flow 333 bbls dist, 6 mln gas, 21/64-in, cp 2800 lbs, td 9307 ft.

SOUTH LOUISIANA WILDCATS

Cameron Parish — Failure: Continental's State-Calcasieu Lake 3, 3248.9 n 17,883.1 w of nec 1-14s-9w, in Lake 33-13s-9w, abnd 7872 ft in anhy.

St. Landry Parish—Failure: Phillips' Neinstedt 1, 2067 nly fr swc 20-4s-6e, th ely 1987 to lcn in 20-4s-6e, abnd 12,530 ft.

SOUTH LOUISIANA NEW PAY TESTS

E. Baton Rouge Parish—University Distillate Discovery: William Helis' R. B. Nelson 15, begin nec sect 65 ge s 31° 08 mins w for 2266.2 on sect line th s 58° 52 mins e 460 at ra in 36-7s-1w, pay 9955 ft, perf 34 shots 9958-61, 9965-70 ft, flow 160 bbls 51.5-gr, 12/64-in, tp 1700 lbs, cp 500 lbs, td 9991 ft.

Iberville Parish—Bayou des Glaise Oil Discovery: Humble's Wilbert Mineral Corp. 6-B, start sec sect 76 go nly on el 1333 th wly at ra 39 to lcn in 76-8s-8e, pay 10,431 ft, perf 36 shots 10,434-444 ft, flow 268 bbls 36.3-gr oil, 0.1% wtr, 9/64-in, gor 682/1, tp 1835 ft, td 10,895 ft.

MICHIGAN WILDCATS

Arenac County—Failure: Sun's Tulloch 1, sw sw se 17-19n-5e, Dundee 2869 ft, abnd 3075 ft.

Barry County — Failure: Louis Zeelman's Ellsworth 1, sw sw se 8-3n-10w, abnd 1934 ft.

Gladwin County—Failure: T. F. Caldwell, Inc.'s Lenten 1, se se sw 33-20n-1w, Dundee 3634 ft, abnd 3700 ft.

Kalamazoo County—Failure: P. F. Broughton's Rayman 1, ne nw sw 21-1s-12w, abnd 1377 ft.

Newaygo County—Failure: E. L. Brouett's Conway 1, nw nw nw 15-14n-11w, abnd 2170 ft.

Saginaw County—Failure: Sun's Jennings 1, nw nw nw 3-10n-2e, Dundee 3001 ft, abnd 3203 ft.

Van Buren County — Failures: J. J. McGerry's Gent 1, sw se ne 21-1s-15w, abnd 1185 ft.

A. H. Boeve's Cummings 1, se ne ne 16-1s-16w, abnd 1075 ft.

Wexford County—Failure: Sun's Grubb 1, sw ne ne 21-21n-10w, Dundee 3756 ft, abnd 3869 ft.

MICHIGAN OUTPOST

Arenac County — Deep River Extension: American and Michigan's Bradley 1, nw nw ne 23-19n-4e, Dundee 2716 ft, flow 406 bbls 3½ hrs, td 2873 ft.

MISSISSIPPI WILDCATS

Clarke County—Oil Discovery: L. J. Rousell's Long Bell Pet. Co. 1, se sw 10-2n-16e, perf 3715-17 ft, Eutaw 14 shots, pump 37 bbls 13.6-gr, td 3808 ft.

Greene County—Failure: Warren Pet. Co.'s A. J. Smith 1, nwc 11-4n-6w, Wilcox 2015 ft, Eutaw 6565 ft, Tuscaloosa 6780 ft, Massive sd 8016 ft, abnd 8042 ft.

Jeff Davis County—Failure: Roeser & Pendleton's Fagan Estate 1, sec 24-6n-18w, Wilcox 3198 ft, M Tuscaloosa 9480 ft, Massive sd 9918 ft, abnd 10,080 ft.

Jones County—Failure: Gulf's Smith County Oil Co. 1, nwc ne 19-9n-13w, Wilcox 2197 ft, Tuscaloosa 7074 ft, Massive sd 8395 ft, abnd 8658 ft.

MISSISSIPPI OUTPOST

Lamar County—Baxterville Extension: Superior's R. Batson 4, sec sw nw 20-1n-16w, Eutaw 7586 ft, Tuscaloosa 8270 ft, Massive sd 8940 ft, perf 8806-18 ft w 120, flow 388 bbls, ½-in, cp 800 lbs, td 9489 ft.

MONTANA WILDCAT

Toole County—Oil Discovery: Texas Co.'s GF 084862, c nw se sw 15-33n-4e, Utopia Block, 2 bbls oil, 100 bbls wtr, reacidized, installing pump, td 2544 ft.

NEW MEXICO WILDCATS

Eddy County—Failure: Sunray Oil Corp.'s Foster 1-B, c se ne 34-17s-31e, elev 3801 ft, salt 925-1915 ft, red sand 3150-70 ft, abnd 4516 ft.

Lea County—Failures: McElvain Bros. et al's Seale 1, 2150 snl 1980 ewl 30-18s-31e, elev 3910 ft, anhy 1670 ft, salt 1800-3015 ft, Yates 3240 ft, brown li 4325 ft, red sd 4419 ft, abnd 4900 ft.

R. Olsen Oil Co.'s State-Cap Rock 1, c se se 29-11s-32e, elev 4414 ft, anhy 1475 ft, salt 1870-2185 ft, Yates 2220 ft, brown li 2360 ft, San Andres 3530 ft, Glorietta 4770 ft, abnd 5115 ft.

Santa Fe County — Failure: Richfield Oil Corp.'s Lee 2, 330 nsl 1530 ewl 14-14n-11e, elev 6900 ft, San Andres 290 ft, Glorietta 320 ft, Yeso 345 ft, Abo 815 ft, schist 2674 ft, abnd 2725 ft.

OKLAHOMA WILDCATS

Bryan County—Failures: Atlantic's State 1, se sw sw 36-7s-8e, abnd 6647 ft.

Atlantic's Brown 1, nw nw se 16-8s-8e, abnd 6676 ft.

Carter County—Failure: R. H. Alexander's Fish 1, nw sw ne 10-1s-2w, abnd 1070 ft.

Coal County—Failure: Skelly's Mayer 1, se sw sw 33-1n-10e, Hartshorn 658 ft, Atoka shale 785 ft, abnd 4621 ft.

Garfield County — Failures: Champlin Ref. Co.'s Myers 1, se nw 8-24n-3w, Miss 5306 ft, abnd 5934 ft.

Gutowsky et al's Johnson 1, nw ne 19-24n-5w, abnd 6520 ft.

Garfield County—Oil Discovery: Gulf's Deck-

er 1, se sw nw 12-20n-4w, Wx sd 6078-6153 ft, pump 91 bbls, td 7153 ft.

Jackson County—Oil Discovery: Texas Co.'s Holt 1, ne ne se 8-1n-19w, Granite Wash 4119-33 ft, pump 84 bbls oil, 10 bbls wtr, td 2976 ft.

Logan County — Failures: R. M. Jordan's Kightlinger 1, se nw sw 14-15n-1e, Hog 3770 ft, Hunt 5050 ft, 1st Wx 5465 ft, 2nd Wx 5490 ft, abnd 5527 ft.

Four States Oil Co.'s Bowers 1, nw nw nw 36-17n-3w, abnd 4781 ft.

Ace Gutowsky's Taylor 1, nw se 6-18n-2w, Miss 5436 ft, abnd 6166 ft.

Payne County—Failures: Skelly's Butcher 1, sw ne ne 2-18n-4e, abnd 4036 ft.

Quinton Little's Freeman 1, c nw ne 1-17n-2e, Oswego 3888 ft, abnd 4809 ft.

Stevens County—Failure: Clark & Cowden's Travelers Ins Co. 1, ne ne se 24-1s-6w, abnd 3000 ft.

Texas County—Gas Discovery: Phillips' Patkins 1, sw sw ne 32-1n-17ecm, Perm 2710-2970 ft, flow 13 mln gas, td 3110 ft.

WEST TEXAS WILDCATS

Andrews County—Ratliff Field Discovery: Shell-Texas Co.'s Ratliff-Bedford 1, c nw ne PSL 4, blk 73, 5 mi w by n of Three Bar fld, nearest prod, elev 3204 ft, anhy 1490 ft, Yates (frosted grains) 2930 ft, brown li 3835 ft, San Andres 4420 ft, Glorietta 5540 ft, Tubb 6500 ft, base Permian 8110 ft, black shale 8310 ft, Devonian 8780 ft, Silurian 9710 ft, Montoya 9930 ft, Simpson 10,240 ft, Ellenburger 11,018 ft, dual comp: flow 1105 bbls 42.9-gr, gor 1025/1, via ½-in, 3000 gals acid Devonian perf 8777-9150 ft; flow 1214 bbls 44.3-gr, 4% bs&w, gor 577/1, via ½-in, 1000 gals acid Ellenburger perf 11,018-11,320 ft, td 11,469 ft.

Gaines County — Failure: Union Oil Co.'s Wescott 1, c sw ne PSL 2, blk C-44, anhy 2280 ft, abnd 3460 ft.

Scurry County—Failure: Texas Co.'s Mitchell 1, c se nw H&TC Ry. 301, blk 97, elev 2580 ft, Yates 940 ft, San Andres 1880 ft, Glorietta 2680 ft, Ellenburger 8245 ft, abnd 8440 ft.

Yoakum County—Failures: Carl B. King-Warren & Dye's Stewart 1, c nw nw sect 382, blk D, J. H. Gibson sur, elev 3590 ft, anhy 2600 ft, brown li 4370 ft, San Andres 4690 ft, abnd 5510 ft.

Texas Co.'s Calahan 1, c nw nw sect 308, blk D, J. H. Gibson sur, elev 3734 ft, anhy 2350 ft, 1st li 4150 ft, San Andres 4530 ft, abnd 5519 ft.

WEST CENTRAL TEXAS WILDCATS

Coleman County—Failure: A. R. McElreath-Fred Suggett-Davidson Dr. Co.'s Bozeman 1, 1180 nsl 1900 ewl M. B. Tatum sur 741, abnd 2060 ft.

Jones County — Failures: Humble's Hawthorne 1, 467 ewl 7000 nsl Maria R. Longoria sur 258, elev 1682 ft, abnd 3706 ft.

Texas Co.'s Dickinson 1, 990 out swc of 480-ac tr and H. B. Williams sur 273, elev 1825 ft, abnd 3157 ft.

Runnels County—Failure: Homer W. Snowden et al's Bright 1, 380 fr m/s/nl 1520 fr m/e/el of B. F. Goats sur 36, elev 2114 ft, Gardner sd 3937 ft, Gray sd 4142 ft, abnd 4400 ft.

SOUTH CENTRAL TEXAS WILDCAT

Bastrop County—Failure: G. C. Richardson's J. O. Miller 1, 330 fr el 495 fr sl 137-ac lse, Isaac Casner sur, n cor county, abnd 2704 ft.

SOUTHWEST TEXAS WILDCAT

Webb County—Failure: Sun's Isaac Hirsch et al 1, 1770 fr sl 300 fr el sur 2030, 2880-ac lse, tried to blow out at 6874 ft, abnd 6874 ft.

LOWER TEXAS COAST WILDCATS

Bee County—Failures: Sam E. Wilson's H. D. Hughes 1, 330 fr ne&sel 80.79-ac lse and blk 19, Hotchkiss sur, abnd 4526 ft.

W. C. McBride's L. N. Connally 1, 1400 fr sw&sel 490.55-ac lse, CCD Co. sur, sd 3650 ft, abnd 3850 ft.

Karnes County — Failure: Phillips' W. P. Belknap 2, 1700 fr nwl 4110 fr nel 399-ac lse, Chas. Haynes sur, abnd 7915 ft.

San Patricio County — Failures: Chastain, Eaton & Smith's H. G. Ritchie 1, 990 fr sl D&D sur sect 31, 86.99-ac lse, abnd 6522 ft.

Rowan & Hope's Marback 1, 467 fr n&wl sw¼ sect 48, 120-ac lse, abnd 6522 ft.

Willacy County — Failure: Standard of Kan.'s E. A. Mann 1, 660 fr n, s, e&wl 10-ac lse, San Juan de Carricitos Gr, sh 64, abnd 10,320 ft.

UPPER TEXAS COAST WILDCATS

Harris County—Failure: Albert Plummer-Brown & Wheeler's J. B. Hine et al 1, 1730 fr sl 330 fr wl A. McCormick sur, 442.72-ac lse, Deer Park area, abnd 8184 ft.

Montgomery County—Failure: Humble's May Oualline et vir 1, 660 fr nl 1684 fr wl 310-ac lse 1470 nw nearest pt on el lse alg Spring Crk, Thos. Ives sur, abnd 11,392 ft.

San Jacinto County—Oil Discovery: Butcher-Arthur's N. R. Dodson 1, 750 of sly/sl 1000 sw of nel W. M. Logan sur, 216.3-ac lse, 1 mi nw of Navarro's Foster Lbr. Co. disc well, elev 250 ft, dual comp: perf 4374-88 ft, flow 2,371,000 gas, ¼-in, 23 mln open fr 4502-ft Cockfield sd; perf 24 shots 4490-4502 ft, flow 170 bbls 43-gr, 10/64-in, gor 269/1, tp 500 lbs, td 6020 ft.

Now-You Can Again
Specify
BRIGGS & STRATTON
"Air-Cooled Power"
Good news for designers, engineers, manufacturers, dealers and users alike. It means you can have — not "just gasoline engines" — but Briggs & Stratton "Air-Cooled Power."
Precision manufacture and constant advancements in design and engineering account for the brilliant record of well over 2-¼ Million of these trouble-free 4-cycle gasoline engines during 26 years of continuous production.
Only by specifying Briggs & Stratton "Air-Cooled Power" can you get all of the advantages which have earned for Briggs & Stratton unquestioned leadership as manufacturers of "the world's finest gasoline engines."
BRIGGS & STRATTON CORP., Milwaukee 1, Wis., U.S.A.
Air-Cooled Power
4 CYCLE
BRIGGS & STRATTON
GASOLINE ENGINES

The OIL WEEKLY'S TRADING POST

USED EQUIPMENT FORUM

CLASSIFIED ADS . . . EQUIPMENT . . . SERVICES . . . PERSONNEL

FOR SALE

■ FOR SALE: Seven 5500 ft. wells, two sands behind casing never been perforated, located Golden Meadow, Louisiana, Field. Wells making about 100 barrels oil per day. Reason for selling, unable to look after properly because of labor situation. Write P. O. Box 1074, Kilgore, Texas.

New 126′ Lee C. Moore Jack-knife derrick per DWG JA-5123; 4′6″ drop substructure for 3 NKU Waukesha's—85% new price.

1—C. T. 5 Houston Portable Drawworks—New—85% new price.

1—4 mtr. Allis-Chalmers drive unit, V-belt, friction clutches, 440 h.p.—55% new price.

JOHNS W. GRAHAM & CO.
418-20 National Standard Building
Houston 2, Texas

■ FOR SALE: Complete Power Drilling Rig. Now running. Excellent condition with practically new Hopper Hoist powered two WAKU Waukesha engines; 7″ x 14″ Gumbo Buster power pump with Buda engine. For appointment call O'Melveny, Woodsboro, Texas, Phone 93 or Corpus Christi 6422.

FOR SALE OR LEASE

Armstrong No. 70 Spudder, complete tools, 65′ steel mast and walking beam, 110 H.P. Twin City Gasoline motor, 430′-12″ casing. Located at Sonora, Texas. Make good failing or slim-hole rig. $5,000.

W. M. Lyle, P. O. Box 4143,
San Francisco, California

MACHINERY SPECIALS
New and Guaranteed

160 h.p. gasoline power units, complete for sawmill or rice field service, each $2285.

35 h.p. gasoline power units, complete, each $340.

25 kva., 125-volt single phase, A.C., 1200 r.p.m. generators, each $817.

5 kw., D.C., 125-volt, drip proof generator, $394.

3 by 4″ centrifugal pump, bronze lined, 500 g.p.m., at $393.

9-17-20-30-50 cubic foot water and air cooled air compressors.

USED BUT NOT ABUSED

83 h.p. General Motor Diesel engines, only each $1440.

160 h.p. Continental R 602 Red Seal marine engine, $1450.

160 h.p. Continental R 602 Red Seal gasoline power units, $1450.

55 h.p. General Motors Diesel engine, only $1000.

100 h.p. Waukesha Hesselman Diesel oil engine, $900.

90 h.p. Continental gasoline power units, complete, $750.

2000 barrels per hour gasoline or oil pumping unit, $3850.

AS IS—WHERE IS
No Reasonable Offer Refused

80 h.p. Waukesha Hesselman.
325 h.p. Lycoming gasoline engine.
165 h.p. Blue Streak Climax gas engine.
80 h.p. at 600 r.p.m. Atlas Diesel.
100 h.p. Standard Diesel.
2 P.D. 40 International Diesels.

It pays to call PAMCO to solve your machinery problems. Marine-Industrial.

POWER APPLICATION & MFG. CO.
W. 8341 Houston, Texas Box 9028

FOR SALE

■ One complete medium size steam drilling rig including derrick and 7400′ 18.10# external upset drill pipe with new Hughes extra hole tool joints. Address: Box 54, c/o The Oil Weekly, Houston, Texas.

■ For Sale: One Fred E. Cooper Model "E" Pulling and Well Servicing Machine with all equipment ready to operate. Runs on its own power. Equipped with license for highway use. For details write Box 870, Lansing, Michigan.

■ FOR SALE: One heavy duty pipe pulling machine with spudder attached mounted on a 3½-ton White truck. This unit is a two-drum unit. It can handle 10,000 feet of pipe of any size. Also a 45-foot heavy duty wood rig. Price $5000 F.O.B. Wooster. Write to David Shafer, Wooster, Ohio.

HELP WANTED

■ **Wanted four graduate mechanical engineers to start as draftsmen with better position available as designing engineer for oil field equipment when qualified. CARDWELL MANUFACTURING COMPANY, INC., Box 2001, Wichita, Kansas.**

■ **Wanted by a consulting geophysical organization: Petroleum Engineers with Hayward Mud-logging experience or its equivalent. Immediate openings in Venezuela. Excellent opportunity for advancement to managerial positions throughout the world. Address: Box 45, c/o The Oil Weekly, Houston, Texas.**

■ Wanted: Man not over 45, thoroughly experienced in oil business, as assistant to manager, capable of taking dictation and typing and dictating own letters; also trading and general office routine. Salary $500.00 to start with opportunity for rapid advancement to right party. State experience fully, references and salary previously earned and all details. Box 53, The Oil Weekly.

■ WANTED: By The Superior Oil Company, men with college background in geology. Single men preferred. Write P. O. Box 96, Bakersfield, California. Apply, 1425 Union Avenue, Bakersfield, California.

■ WANTED: By The Superior Oil Company, men with college background in electronics. Single men preferred. Write P. O. Box 96, Bakersfield, California. Apply 1425 Union Avenue, Bakersfield, California.

EXPERIENCED
PARTY CHIEFS, PARTY MANAGERS, COMPUTERS, OBSERVERS, SURVEYORS, DRILLERS
are wanted for foreign seismic parties
UNITED GEOPHYSICAL COMPANY
595 East Colorado Street
Pasadena 1, California
822 Thompson Building
Tulsa 3, Oklahoma

SITUATIONS WANTED

■ Petroleum Geologist desires connection with independent company or operator. 15 years experience in West Texas and New Mexico, 4 years Gulf Coast, 2 years South Texas. Address: Box 55, c/o The Oil Weekly, Houston, Texas, or call H-9592.

■ Am 29 years of age, married, one child—Graduate of TMI—Graduate of Texas A&M in Business Administration, majoring in Market and Finance with an 87 average. One year Law at Texas "U" on Contracts, Personal and Real property. One year with Goodyear as selected Student Budget Manager when called to service as A&M ROTC 2nd Lt. Nov. 20th, 1940. Served with 80th Div. 314th FA Bn. through France, Luxembourg, Germany and Austria—awarded Bronze Star and Oak Leaf Cluster. Eligible as Major for discharge with 114 points. Want connection with future based on merit. Investment if necessary. Maj. J. F. Roark, No. 230 E. Huisache St., San Antonio, Texas.

■ Experienced Warehouseman and Buyer of drilling and production equipment desires change. Sixteen years experience. Independent oil company or drilling contractor preferred or would consider sales work for export office. No objection to part time foreign assignment. Address Box 56, c/o The Oil Weekly, Houston, Texas.

UPPER TEXAS COAST NEW PAY TEST

Liberty County—S. Liberty Discovery: P. J. Bashara's Pickett 1, (OWDD) 50 fr n&wl lse, M. G. White sur, elev 30 ft fr gr, sd 3600 ft, perf 52 shots 3600-18 ft, flow 87 bbls 41-gr, 5/32-in, gor 200/1, tp 250 lbs, cp 448 lbs, otd 2976 ft, td 3863 ft.

EAST TEXAS WILDCAT

Hunt County—Failure: L. A. Helms et al's Adams 1, (OWDD) H. T. Chenowith sur, otd 3400 ft, elev 610 ft, Woodbine 2628 ft, Paluxy 3925 ft, abnd 4011 ft.

EAST TEXAS NEW PAY TESTS

Cherokee County—Lone Star Shallow Discovery: G. L. Walker-Wm. H. Foster et al's Bowling-Pure 1, 1362 ewl 660 snl of 260-ac tr, Wade H. Walters sur, ¾ mi w by n of Woodbine prod, elev 357 ft, Navarro 3087 ft, Nacatoch 3267 ft, cut fault 4478 ft, Georgetown 4455 ft, Paluxy 5224 ft, Glen Rose 5545 ft, massive anhy 6975-7204 ft, James 7676 ft, Pettit 7928 ft, Travis Peak 8278 ft, flow & pump 170 bbls 41-gr, Nacatoch sd 3355-70 ft, 40 qts nitro 3348-64 ft opposite casing, td 8370 ft, pb 3370 ft.

Wood County — Manziel Gloyd Discovery: Magnolia's Malone-Taylor 1, (OWDD) 330 out sec of 30-ac tr, John Polk sur, otd 6405 ft, elev 470 ft, Georgetown 5200 ft, Paluxy 6293 ft, Glen Rose 6642 ft, massive anhy 7808-8006 ft, Hill 8084 ft, Gloyd 8314 ft, Young 8390 ft, Pittsburg 8696 ft, 2,265,000 gas, 20 bbls dist via 2-in, 10,000 gals acid Gloyd perf 8316-64 ft, td 8802 ft, pb 8370 ft.

NORTH TEXAS WILDCATS

Archer County—Failure: Manning & Brown's Mahler 1, 933 nsl 330 wel of 120-ac tr, I. Kornicky sur A-244, elev 1008 ft, KMA li 4108 ft, Hull-Silk 4410 ft, Barnett 5180 ft, detrital 5450 ft, abnd 5537 ft.

Childress County—Failure: Ohio Oil Co.'s Gibson 1, 800 nsl 720 ewl W&NW Ry. 484, blk H, elev 1828 ft, base Coleman Junction 3015 ft, Cosco 3650 ft, base granite-Wash 7029 ft, abnd 7374 ft.

Clay County—Failure: G. E. Kadane & Sons'

WANTED TO BUY

■ WANTED TO BUY: Complete power rig suitable for workover. Compounded draw works. No junk wanted. Please give condition and price. Address: Box 57, c/o The Oil Weekly, Houston, Texas.

SERVICES

A large manufacturer having representation and offices in all oil producing states, calling on field superintendents, purchasing agents, and warehousemen, desires to contact a manufacturer who desires sales representation for his product. Address: Box 52, c/o The Oil Weekly, Houston, Texas.

POSITIONS WANTED BY SERVICE MEN

■ Attorney, University of Oklahoma graduate, 13 years varied experience in general practice and trial work, interested in position in legal department of oil company or industry connected with oil. Best of references. Pfc William A. Vassar, ASN 28697249, 32nd Headquarters and Hq. Det., Camp Polk, La.

ADVERTISING RATES

TRADING POST SECTION

Regular classified advertisements for this special section, set in type this size without border, take flat-rate of 7 cents per word for the first insertion and 5 cents per word for each subsequent insertion of same copy. Display advertisements for this section, set in suitably larger type with ruled border, are $5.00 per inch for the first insertion and $4.00 per inch for subsequent insertions. Remittance must accompany copy which should be sent to:

Trading Post Section, The Oil Weekly
P. O. Box 2608 Houston 1, Texas

Hoff-Conoco 1, 330 out swc sect 54, blk 2, Clark-Plumb sur, elev 1024 ft, abnd 3910 ft.

Cooke County—Failure: S. D. Johnson-Alco Valve Co.'s Cauldwell 1, 350 e 150 n of e cor of J. Rodriquez sur, but in W. Thomas sur A-1025, abnd 1780 ft.

Wichita County—Failures: Scott Bros.' Mackechney 1, 1250 snl 150 ewl sect 18, Lge 2, Denton CSL sur, abnd 1255 ft.

Wichita Engrg. Co.'s Obenhaus 1-A, 1170 snl 1000 ewl blk 323, Waggoner Colony Lands, abnd 2152 ft.

Frank Wood et al's Porter 1, 2520 nsl 1320 ewl H&TC Ry. 32, blk 5, abnd 2000 ft.

NORTH TEXAS OUTPOST

Cooke County—Sivells Bend Failure: E. B. Cox-Jake Hamon's Davis-Texaco 1, 330 out nwc 148-ac lse, J. C. Johnson sur A-527, elev 794 ft. base Rocky Point 5928 ft, dense li 7650 ft, abnd 7732 ft in Strawn.

NORTH TEXAS NEW PAY TEST

Cooke County—Almon Deeper Pay Discovery: Owen M. Murray-Jim Anderson's A. T. Gregory 1, 2440 nsl 2050 wel J. M. Randolph sur A-868, elev 900 ft, pump 147 bbls 30-gr oil, Strawn sd 3482-86 ft.

WYOMING WILDCATS

Big Horn County—Oil Discovery: Hageman Pond-Hanlon's Stanolind 1, e½ sw se 12-51n-93w, Lamb structure, pump 240 bbls fr Tensleep, topped 3449 ft.

Carbon County—Failure: British-American's U. P. 1, sw sw se 23-21n-78w, Little Medicine Bow area, abnd 7170 ft.

Hot Springs County—Failure: Gem Oil's Owl Creek 1, se 14-44n-95w, abnd 5562 ft.

Hot Springs County—Oil Discoveries: Continental's Unit 9, sw nw sw 24-44n-95w, Gebo Dome area, flow 204 bbls.

Pacific Western Oil Corp.'s 1, sw 36-44n-93w, Zimmerman Butte area, Embar 4309 ft, recovered 630 ft live oil on dst 4320-4348 ft, td 4310 ft.

WESTERN CANADA WILDCATS

Central Alberta Plains—Innisfree Failure: W. G. deKoch's Cameron-Helena 1, lsd 4 24-52-12w4th, abnd 2787 ft.

South Alberta Plains—Wrentham Failure: Mid-Continent-British Dominion's No. 1, lsd 6 27-7-17w4th, sso in Ellis sd, abnd 3438 ft.

WILDCAT STARTS

ALABAMA

Mobile County: Danciger O&R Co.'s William R. Giesler 1, ne se 8-4s-2w, dk.

Talladega County: C. L. Collins Ben E. Lamb 1, ne 11-19s-3e, lcn.

ARKANSAS

Drew County: C. A. Kinard's McCaulley 1, c ne sw 14-12s-6w, lcn.

CALIFORNIA

Los Angeles County: Dumm Bros.-Olympic Ref. Co.'s 16, 29-1s-12w, Los Angeles City area, lcn.

Kern County: Belridge Oil Co.'s 58A-18, 18-28s-20e, South Belridge area, dr.

California Exploration Co.'s Porter 1, 17-30s-29e, Edison area, dr.

Harold J. Johnson's O'Neil 1, 8-30s-30e, Northeast Edison area, dr.

Pacific Western Oil Corp.'s Nat. Royalty 1, 5-26s-22e, Miramonte area, lcn.

Transcal Drlg. Co.'s 1, 30-28s-23e, Buttonwillow area, rur.

Tulare County: Elmer C. von Glahn's Green Cattle 1, 33-21s-23e, Corcoran area, lcn.

San Mateo County: E. T. Willard's Trustee 1, 15-6s-5w, Half Moon Bay area, lcn.

Ventura County: Oceanic Oil Co.'s Hunter 1, 32-4n-18w, Torrey Canyon area, lcn.

COLORADO

Weld County: Frontier Ref. Co.'s Unit 1, 22-5n-67w, mim.

FLORIDA

Hernando County: Ohio's Hernasco Corp. 1, nw 19-23s-18e, dk.

ILLINOIS

Christian County: Oscar A. Reed's Bennett 1, se se se 27-15n-1w, lcn.

Clinton County: J. C. Powell et al's Allen 1, sw sw nw 5-2n-2w, lcn.

Effingham County: Paul Doran's Whorten 1, nw sw nw 12-6n-4e, dr.

Jasper County: Shulmon Bros.' Brenton 1, nw nw ne 31-7n-10e, dr.

Jefferson County: John Darlan's C. B. & W. R. R. Co. 1, sw sw nw 21-1s-1e, lcn.

Marion County: Superior's Laura McNeilly et al 1, nw nw se 31-1n-2e, lcn.

KANSAS

Butler County: J. P. Gaty's Boucher 1, se ne sw 18-27s-3e, mim.

Ellis County: Phil Han's Collan 1, swc 17-13s-20w, rur.

Greenwood County: R. P. Johnson's Johnson 1, c sw sw 18-26s-13e, fish 585 ft.

Pratt County: Ed Swearer et al's Herlein 1, sw se 22-28s- 13w, lcn.

NORTH LOUISIANA

Franklin Parish: C. L. Smith's A. B. Mitchell Est. 1, 28-11n-7e, lcn.

C. L. Smith's A. C. Polk Est. 1, c nw se 27-14n-7e, lcn.

SOUTH LOUISIANA

Cameron Parish: Magnolia's Lutcher 1-D, 2180 s 107 e of nwc 33-14s-11w, Mud Lake area, Hackberry test.

St. Charles Parish: Union of Calif.'s Milliken & Farwell 1, start e cor 74-12s-19e, go 4790.36 e th n 2875.85 to lcn in 26-12s-20e, 10,000-ft test.

MICHIGAN

Allegan County: S. L. Findley's Kaylor 1, sw sw sw 1-1n-14w, lcn.

Livingston County: Alpha Oil Co.'s Harris 1, ne se ne 25-3n-4e, rig.

Montcalm County: Sohio's Tousley 1, nw nw ne 9-9n-5w, rig.

Newaygo County: Mich. Consolidated's State 1, nw nw nw 2-15n-11w, lcn.

Oceana County: Carter Oil Co.'s Neuman 1, ne se ne 21-14n-18w, rig.

Tuscola County: E. E. Brehm's Skornia 1, nw se sw 35-11n-8e, dr.

Van Buren County: Smith Pet. Co.'s Kalisiak 1, ne ne sw 21-1s-13w, rig.

MISSISSIPPI

Lincoln County: Danciger O&R Co.'s Central Lbr. Co. 1, sw 22-8n-5e, lcn.

Sharkey County: V. V. Ryan's Houston Est. 1, sw sw 32-11n-6w, lcn.

MONTANA

Glacier County: McDonald, Henderson & Overcash's Teeples 1, se ne nw 14-33n-6w, w of Cut Bank, Blackfeet Indian reservation, lcn.

Petroleum County: Chamberlain's Charles 1, 1540 s of nl 1100 e of wl 21-15n-30e, se of Schrock disc, mir.

NEBRASKA

Scotts Bluff County: Baxter Drlg. Co.'s Kingree 1, sec ne 5-21n-54w, lcn.

NEW MEXICO

Chaves County: DeKalb Agricultural Assn.'s J. P. White 2, c sw ne 30-10s-28e, 3500-ft San Andres test.

Eddy County: McKenney & Schrock's State 1, ne se nw 21-20s-28e, 650-ft test.

OKLAHOMA

Cleveland County: Stanolind et al's Horn 1, ne ne ne 22-8n-1w, lcn.

Cotton County: D. H. Bolin's Zeigler 1, sw sw sw 23-4s-13w, mit.

Creek County: Deep Rock et al's Cities Service 1, sw sw ne 33-19n-8e, c&p.

Garfield County: Stephens Pet. Co.'s Kaiser 1, sw sw sw 7-20n-3w, rig.

Sun's Christie 1, ne nw 28-24n-7w, lcn.

Garvin County: Davon Oil's Tincher 1, nw ne se 17-4n-2e, lcn.

Schneider & Pennington's Pollock 1, se sw sw 13-4n-3e, dr.

Sohio's Howard 1, se se nw 17-1n-2w, lcn.

O. P. Burton's Jones 1, se se 22-2n-1w, dk.

Sohio's Tolbert 1, ne nw ne 9-3n-1w, rur.

Jefferson County: W. H. Gant's Barrett 1, sw ne ne 17-6s-7w, mi.

Logan County: Superior Oil of Calif.'s Johnson 1, nw sw sw 12-15n-4w, mim.

Okfuskee County: Amerada's Berryhill 1, sw se ne 17-10n-10e, lcn.

Pawnee County: Olson Drlg. Co. et al's Gibbons 1, sw sw sw 5-20n-9e, lcn.

Pottawatomie County: Globe Oil Ref. Co.'s Romberg 1, ne ne sw 23-10n-4e, lcn.

WEST CENTRAL TEXAS

Coleman County: Onyx Ref. Co.'s J. P. Hall 1, 330 out of nwc of 87-ac lse, Leander H. McNeil sur 230, 2750-ft test.

Jones County: Rhodes Drlg. Co.'s W. D. Swann 1, 990 ewl 3917 nsl I. Wiley sur 281, 5600-ft Ellenburger test.

Stephens County: Panhandle Ref. Co.'s Oma Repass 1, 467 out swc sect 1066, TE&L Co. sur, 4750-ft cable test.

WEST TEXAS

Andrews County: DeKalb Agricultural Assn.'s W. E. Jones-Humble 1, c nw nw PSL 15, blk A-40, 7200-ft Yeso test.

Mitchell County: Hickok & Reynolds' F. A. Langley 1, nw nw se T&P Ry. 25, blk 29, 3500-ft cable test.

Presidio County: Argo Oil Corp.'s Mitchell Bros.-State 1, c ne nw TW&NG Ry. 40, blk 1, 7500-ft Pennsylvanian test.

SOUTH CENTRAL TEXAS

Dimmitt County: Howard & Wheeler's Sarah W. Hendrichson 1, 990 fr swl blk 13, lot 5, Good Luck Colony sbdn, blk 15, 86-ac lse, 2 mi se Valley Wells, 5200-ft test.

Gravis & Mitchell's S. Hinojosa 1, 330 fr s&wl A. M. Perez sur 71, 132-ac lse, 6000-ft test, dk.

SOUTHWEST TEXAS

Starr County: Boyd & Galt's C. Ramos Est. 1, 990 fr wl 2963 fr sl sect 150, 1126-ac lse, 4500-ft test, mir.

Heep Oil Corp.'s Starr Co. Cattle Co. 1, 330 fr w&nl blk 11 1766.1 fr wl porc 89, 262.42-ac lse, 2800-ft test.

W. H. Holland's M. M. Garcie 1, 330 fr wl porc 91 330 s of sl sur 917, nl of blk and lse, 4500-ft test.

Webb County: Blanco Oil Co.-Al Buchanan's A. M. Bruni Est. 1, 330 fr s&el blk 28 4950 fr nl 5610 fr el Albercas Gr, Brown sbdn, 3500-ft test.

LOWER TEXAS COAST

Goliad County: Ginther, Warren & Ginther's Carrie G. Wood et al 4, 660 fr ne, se&swl blk 12, 4400 ne of Well 1, Pedro Villa sur, 3749.9-ac lse, woc 850 ft.

Jackson County: A. H. and C. L. Rowan's L. A. Ward 1, 330 fr m/nly/nl 990 fr m/ely/el 160-ac tr, 330 w of swc I&GN sur, 7000-ft test.

Karnes County: Federal Royalty Co.-Rio Grande Drlg. Co.'s Mrs. May Yanta 1, 467 sw Ecleto Crk 467 nw of interior cor on el tr 328.5-ac lse, John Pickett sur, 8500-ft test.

Texon Roy.-Alco Valve Co.'s P. J. Nieschwietz 1, 1873-ac lse, Gasper Flores Gr, 6750-ft test.

San Patricio County: Coastal Ref.-Henshaw Bros.' Luling Foundation 1, 330 fr s&el 153-ac lse, Cubage & Miller sbdn of O'Connor pstr sect 50, lcn.

Phillips' Mrs. Ola McCann Unit 10-1, 330 fr n&wl 100-ac lse, W. Smith sur, 10,500-ft test.

UPPER TEXAS COAST

Brazoria County: Windsor Oil Co.'s Ernest L. Croix 1, 330 s&el 20-ac tr 18, ACH&B sur, sect 89, 6500-ft test.

Colorado County: Jack W. Frazier's McLane & Johnson 1, 467 fr s&el sect 40 and I&GN sur, 476-ac lse, 6500-ft test.

Ft. Bend County: Continental's G. M. Burmer 1, 990 fr s&el 167-ac tr, S. Isaacs sur, mim.

Harris County: J. S. Abercrombie Co.'s Lenoir M. Josey 1, 100 fr n&el sect 1 WCRR sur, 2115.53-ac lse, 7500-ft test.

Jefferson County: Glenn H. McCarthy's Tyrrell Tr. 3, 660 fr el 330 fr sl n½ sect 82, 1030-ac lse, W. C. Sunshie sur, lcn.

Liberty County: Ohio Oil Co.'s Kirby Lbr. Co. 1, 660 fr s&el 348 fr nl tr 5, James McCoy Lge, elev 165 df, 10,500-ft test.

Polk County: Jordan Drlg. Co.'s Lynch Davidson & Co. 1, 660 s of old MK&T RR grad, 660 fr wl 223-ac lse, Geo. Jamison sur, 2500 n of Bear Crk, 6500-ft test.

Wharton County: Humble's Mrs. R. Greenebaum et al 1, 660 fr nl 994 fr el 660 fr wl 100-ac lse in ETRR sur, sect 57, 7500-ft test.

EAST TEXAS

Houston County: Al G. Hill-Chapel Hill Gas System's Mrs. J. P. Mason 1, 660 fr m/e/nel 1384 fr m/e/sel of 76-ac tr and Stephen Hatton sur A-494, mim for 8000-ft Woodbine test.

Hunt County: Paul B. Scott et al's Fannie B. Irwin 1, 550 wel 600 snl of Mary Keys sur A-570, 1 mi n of Quinlan, mim for Paluxy test.

NORTH TEXAS

Cooke County: S. D. Johnson-Russell Maguire's D. E. & E. M. Gross 1, 426 fr sel 725 fr nel of 840-ac tr, John Guffey sur A-1545, 3000-ft test.

Young County: A. Kriss et al's D. R. Willard 1, 450 out nwc sw¼ TE&L Co. sect 227, 1100-ft rotary test.

Fred M. Manning's F. V. Vinson 1-C, 332 ewl 1530 nsl TE&L Co. sect 1454, 1000-ft cable test.

WYOMING

Fremont County: British-American's Tribal E-6, ne ne nw 5-3n-1w, Steamboat Butte area, dk.

British-American's Tribal C-8, nw sw ne 32-4n-1w, Steamboat Butte area, dk.

Hot Springs County: Ohio Oil Co.'s Washakie 8, ne 18-46n-98w, Grass Creek area, ru.

Natrona County: Gen. Pet.'s 76X-21-G, 21-35n-77w, ru.

Sweetwater County: Texas Co.'s Unit 1, se nw nw 1-18n-98w, Table Rock district, wtr well dr.

Washakie County: Parker Bros.-California Co.'s Nieber 1, Lot 8, 19-45n-92w, Nieber Dome, rurt.

WESTERN CANADA

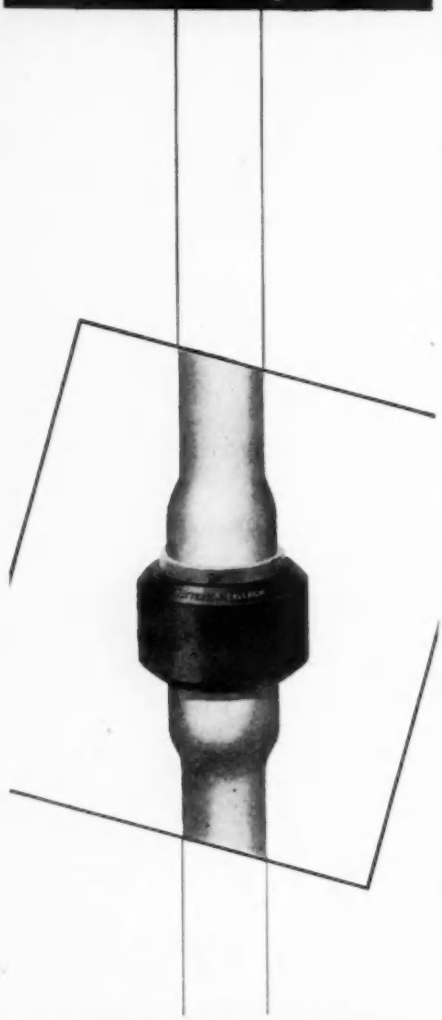
Alberta Syncline Area—De Winton: Royalite Oil Co.'s De Winton 1, lsd 14 16-21-1w5th, ru.

Central Alberta Plains—Kinsella: Imperial Oil's Kinsella 1, lsd 11 20-47-9w4th, ru.

South Alberta Plains—Lethbridge: Imperial Oil's Lethbridge 1, lsd 3 10-8-22w4th, dr.

Saskatchewan — Davidson: Imperial Oil's Davidson 1, lsd 16 8-27-1w3rd, ru.

"Best Bet Yet"



Cut Metal-to-Metal Contact

These oil-proof, insulating, wear-resistant, plastic tubing protectors are an integral part of the tubing collar. Made in all sizes, they prevent the metal-to-metal contact that causes many expensive "wet" jobs in pumping wells. Without this contact, the collars do not wear holes in the casing.

See Composite Catalog

Patterson-Ballagh TUBING PROTECTOR

LOS ANGELES 1 · HOUSTON 10 · NEW YORK 6

SQUEAKS from the BULL WHEEL

Squelched?

"Daughter, who broke that couch in the living room?"

"It broke a few minutes after I came home last night, Dad, but neither of us was hurt."

Finicky

"Could I try on that dress in the window?"

"Well, if you insist, Madam, but we'd much rather you'd use the dressing room."

Now She's All Burned Up

"I'll endorse your cigarettes for no less than $50,000."

"I'll see you inhale first, Toots."

Amen

Preaching interminably on the immortality of the soul, the parson shouted at his weary congregation: "I look at the mountains and cannot help thinking, 'Beautiful as you are, you will be destroyed, while my soul will not.' And then I gaze upon the ocean and cry, 'Mighty as you are, you will eventually dry up, but not I'."

This Curious World

Many a girl will keep a secret if he's good-looking.

Some women are like dynamos because all they have on is charged.

"If you children are good," said Mama Mosquito, "I'll take you to the nudist camp tonight."

"Henry, darling," gurgled the new bride, "just think—now that we're married, we won't have to pull down the shades any more."

"Let me off at the next stop, conductor. I thought this was a lunch wagon."

If the world laughs at you, laugh right back. It's as funny as you are.

It's a wonder Solomon ever got any sleep, considering the 1000 or so things he had on his mind.

Some pretty nurses should subtract ten beats from the patient's pulse to allow for their personality.

Many a professional gambler would rather go to his girl's house and play for fun.

The most sought-after girls are those that do the wrong thing at the right time.

Marriage is like a hot bath—after a while it's not so hot.

Girls with high principle and low interest usually wind up bankrupt in the love business.

Many a happy home has been broken up by an idle roomer.

Women and Taxes

Legislators casting about for new taxes to replace the lowered income levies might take the advice once offered by Jonathan Swift.

"I propose," said he, "that a tax be levied on female beauty."

"But could we make the women pay enough to make it worth while?" he was asked.

"Ah, yes. Let every woman be permitted to assess her own charms—then she'll be generous enough."

Poet's Nook

The poor duck hunter in his blind
Is chilled in front and wet behind!
It's seven hours since he fed,
And twenty since he's been to bed.
It cost him near a hundred bucks
To hide here from the silly ducks,
Which presently, ere day dawns dim,
Will rise and hide themselves from him!

Yes, Indeedy

"Is you married?" inquired the inquisitive maid of her new mistress.

"No, I am a maiden lady."

"You is! Got any chillun?"

"Certainly not."

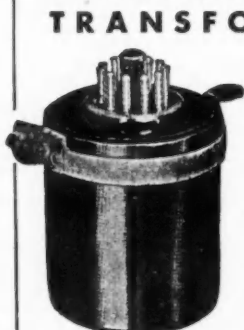
"Lawsy me. Lucky, ain't you?"

Life Is Like That

Chickens scratch around a lot
But in the end they go to pot.

CORE DRILLING SERVICE
to 2000 ft.
New Shot Hole Drills For Sale
ROUSE
EXPLORATION DRILLING CO.
3511 Milam Phone J 2-4377
HOUSTON, TEXAS

GEOPHYSICAL TRANSFORMERS



sealed against Sub tropical humidity—"Sextuples shield-in," improved uniformity, minimum size and weight, *plug - in terminal block.

* *Also available with terminal lugs.*

GEOPHONE CABLE

Full line of Geophysical electronic supplies.

HARRISON EQUIPMENT COMPANY
1422 SAN JACINTO
PHONE PRESTON 4149
HOUSTON • TEXAS
ELECTRONIC • OIL EXPLORATION • SUPPLIES

L. H. True, acting manager of Magnolia Pipe Line Company, has been elected a vice president. His service with the company dates back to 1921 as a vacation-time worker while rounding out his education at Belton, Texas. He was given steady employment late in 1922 in the Smackover, Arkansas, field as a time checker.

L. H. True

A transfer to Oklahoma involved duty in the ditching gang and as an oil pumper. He served as a gauger during the Corsicana-Powell field boom, then was shifted to North Texas for similar duties, followed by four years in West Texas. He worked as a pipe line scout during the early stages of the East Texas field development. This assignment led to his appointment as superintendent of the Luling, Texas, district in 1934, and in 1937 he was promoted to general superintendent of the Texas-Arkansas-Louisiana district with headquarters at Dallas. A year later he became assistant manager and a member of the board of directors in 1945.

K. O. Houston, 11 years with The Texas Company, South Texas division, as petroleum engineer, has become affiliated with Barnett Petroleum Corporation, Dallas, as geologist and petroleum engineer. He will maintain headquarters in Dallas.

J. A. McCutcheon, formerly chief engineer for British-American Oil Producing Company at Tulsa, and recently returned from Canada, has joined Sohio Petroleum Company and is stationed at Mt. Vernon, Illinois.

R. D. Curtis has resumed his post with Barnsdall Oil Company at Tulsa as proration engineer after two years with the Petroleum Fuel Division in the European theater.

H. B. Kniseley of Tulsa, editor of *The Link*, official publication for The Carter Oil Company, was elected first vice president of the Southwestern Association of Industrial Editors.

John H. Murrell of DeGolyer & McNaughton, Dallas, addressed the Tulsa Geological Society on "Geology and Engineering Aspects of the Oil Fields of the Middle East."

C. W. Tomlinson, consulting geologist, Ardmore, addressed the Pick and Hammer Club at the University of Oklahoma on southern Oklahoma oil fields and the geology of the Arbuckle Mountains.

Paul J. Bond, traffic manager of The Pure Oil Company, Chicago, has become head of the department.

Bond succeeds the late **Henry Hauseman,** who had been in charge of the department for 28 years. Bond has been with Pure 25 years, having been first employed by the company in Columbus, Ohio, in May, 1920. He has had continuous service in Pure's traffic department except for three years with PAW. Before returning to Pure he was director of supply and transportation for PAW's District 2, with headquarters in Chicago.

J. C. Wright, formerly superintendent for Panhandle Eastern Pipe Line Company at Maumee, Illinois, has been promoted to superintendent of pressure control at Kansas City, Missouri.

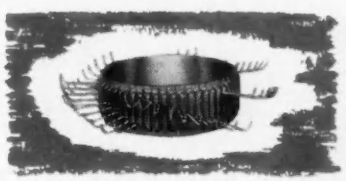
J. Edwin Dickinson, former landman for Sun Oil Company in West Texas and an independent for the past year, has joined American Trading & Production Corporation with headquarters at Midland, Texas.

CEMENTING AN OIL WELL IS LIKE DIVING..

You can't change your mind after you've started!

Before you start cementing, check your preparation. Have you done everything to insure a job done right the first time? Are you sure the wall of the hole will be thoroughly cleaned, so the cement will make a permanent, fluid-tight bond? Is the casing centered in the hole, so the cement will make a wall of uniform thickness, a sheath that is permanent protection against fluid migration? ☆ ☆ ☆ If you're using B & W Cleaning Guides — the proper number of them, properly spaced — you can answer 'yes' to those questions. Then, move the casing while cementing, and you insure proper equalization and distribution of the cement.

It's cheaper... quicker... easier to use ENOUGH B-W *Wall Cleaning Guides to insure a good job the first time.*



B and W INCORPORATED

BRUCE BARKIS • KENNETH WRIGHT

Well Completion Specialists

WEST COAST: 3545 Cedar Avenue
Long Beach, Calif. • Phone: L. B. 4-8366
GULF COAST: 305 M & M Building
Houston, Texas • Phone: Preston 9783

BETTER
Steel Forgings
for
CHRISTMAS TREE FITTINGS
BEAUMONT
WELL WORKS COMPANY
BEAUMONT, TEXAS

FOR A GOOD, HONEST WATER CONDITIONING JOB... LARGE OR SMALL
Call JOHN FIELD-MAN ON YOUR NEXT WATER CONDITIONING JOB
LELAND HAMNER CO.
P. O. Box 1065 - Capitol 9758 - Long Distance LD 2175
2211 PRESTON AVE. HOUSTON, TEXAS

LOANS
ON INTERESTS IN
OIL AND GAS PROPERTIES
David Donoghue
Fort Worth Nat'l Bank Bldg.
Fort Worth 2, Texas

MEN IN THE INDUSTRY NEWS

Edward V. O'Rourke, professor of petroleum engineering at Ohio State University, has been appointed director of Marietta College's new Edwy R. Brown, School of Petroleum. Endowed by the will of the late Edwy B. Brown, Marietta alumnus, the school trains young men for careers in the oil industry.

Edward V. O'Rourke

O'Rourke's experience includes scouting in the oil fields of West Virginia, engineering in Chile, sampling and assaying in Nevada, field exploration in Venezuela, consulting engineering in Columbus, Ohio, and 20 years of teaching at Ohio State. He has been associated with Gulf Oil Corporation, the Maracaibo Oil Exploration Corporation, the Nevada Consolidated Copper Company, and Phillips Petroleum Company.

E. L. Selk, geologist for Stanolind Oil and Gas Company, has been transferred from Tulsa to Oklahoma City.

R. S. Shannon has resigned from Continental Oil Company to become an independent operator and is starting a wildcat test north of Greasewood Flats, Weld County, Colorado.

Jack Forbes is resigning from Reed Roller Bit Company at Oklahoma City to become an excavation contractor. He was discharged recently from the service after having been in action in the South Pacific.

G. P. Robertson, former glider pilot for the Army Air Forces and a German prisoner for several months, has rejoined The Ohio Oil Company as landman in the Permian Basin with headquarters at Midland, Texas.

W. H. Bowman has been named market development manager of Jefferson Chemical Company, Inc., New York. Dr. Bowman will be responsible for organizing market research, market development and sales and technical service facilities.

Dr. A. G. Loomis, formerly in charge of research in production and drilling problems for Shell Development Company at Emeryville, California, has joined the firm of Keplinger and Wanenmacher, petroleum engineers, Tulsa.

Harry L. Smith, national director of Kelite Products, Inc., Los Angeles firm manufacturing industrial cleaning compounds, returned recently from a six weeks' reconnaissance trip through the country to check on postwar factors important to the cleaning compound industry.

P. E. Conner has been appointed sales manager for Universal Packing and Gasket Company, Houston. A former employe of Humble Oil & Refining Company, Conner also spent three years as exploration engineer in South America for Standard Oil Company (New Jersey) and seven years as geophysical supervisor for The Pure Oil Company. In 1936 he joined Reed Roller Bit Company to handle the Louisiana territory. He was loaned to PAW in 1945.

P. E. Conner

T. L. Barnett has been made Gulf Coast district drilling superintendent for Phillips Petroleum Company, with headquarters in Houston. Phillips' Gulf Coast district formerly was part of the Oklahoma district. Barnett leaves the post of assistant superintendent of the Phillips drilling department at Oklahoma City.

W. G. Elicker recently was elected secretary of The Texas Company, succeeding **R. L. Saunders,** who resigned as secretary at the time he assumed his new duties as vice president in charge of the company's domestic sales departments. **W. F. Moore** has been appointed general manager of foreign operations of the company.

Dr. H. B. Stenzel, geologist in the Universtiy of Texas' Bureau of Economic Geology, and **Mrs. Helen Jeanne Plummer,** consulting geologist in the Bureau, have been appointed to the Joint Committee on Zoological Nomenclature for Paleonthology in America.

B. A. Wyatt, rental clerk in the Tulsa office of The Texas Company, has been transferred to the land department at Denver. **M. E. Glission,** land man in the Illinois district, has been transferred to Shelby, Montana, as assistant land mand and liaison man with state agencies.

Robert V. Dillman, land man for Cities Service Oil Company at Olney, Illinois, has been named district land man at Oklahoma City.

John M. Martin has been appointed manager of the Pittsburgh, Pennsylvania, explosives office of Hercules Powder Company. Formerly operating manager of the Hercules-operated Sunflower Ordnance Works in Kansas, he suceeds **LeRoy Keane,** who has been appointed director of sales of the Hercules Explosives Department in Wilmington, Delaware.

H. T. Hopkins has been appointed assistant district manager for Republic Supply Company at Kilgore, succeeding **Tom C. Hendricks** who has been transferred to Wichita Falls as district manager. Hopkins has served Republic at various points throughout the southwest since February, 1923, and has been located at Kilgore since February, 1939. He will continue to make his headquarters at Kilgore but will serve as assistant to **J. B. Lionberger,** district manager at Shreveport.

H. T. Hopkins

Harris Lodge, E. D. Herron, Jr., and **Edward Scown** have returned to former jobs with Houston Oil Field Material Company, Houston, after service in the armed forces. Lodge was a Lieutenant in the Navy and will serve as contact man with operators and contractors in the Houston area; Herron was in the Navy also and will do sales contact work in the Houston district. Scown served in the Navy and will function as an engineer, specializing in gas control and recycling work.

George O. Boomer was recently elected president of Tube Turns, Inc., Louisville, Kentucky. Boomer succeeds Rudy E. Fritsch, who resigned in October but who will remain with Tube Turns as a consultant.

W. W. Heavner, Continental Supply Company, has been transferred from Healdton to the Oklahoma City district.

Charles Cargile has joined the geological department of Phillips Petroleum Company and is stationed at Shawnee, Oklahoma.

E. A. Murray of Cleveland has been appointed manager of the manufacturers products department in the Chicago sales office of the American Steel & Wire Company, subsidiary of United States Steel Corporation. **C. J. Quill** of Chicago has been named assistant manager of the department.

Fred C. Smith has been appointed director of quality for Tube Turns, Inc., Louisville, Kentucky. Prior to joining Tube Turns in January, 1943, as chief metallurgist, he was field metallurgist for Carnegie-Illinois Steel Company.

Frank M. Perry has been appointed manager of the Natural Gasoline and Chemical Division of Cities Service Oil Company, succeeding **Harry A. Ells,** who has joined United Carbon Company, Charlestown, West Virginia.

J. C. Failing has become sales engineer for George E. Failing Supply Company, Enid, Okla., and Houston, manufacturers of portable exploration and drilling equipment.

He has been associated with his father in the manufacture of drilling equipment since the company was organized. During the war he served with the Seabees, seeing action on several islands of the Pacific and being with the first group of Seabees to land on Guadalcanal.

J. C. Failing

W. E. Bakke, for five years petroleum geologist in charge of the oil loan department for First National Bank of St. Louis, has resigned his position to reenter the oil business as consulting geologist and operator at San Antonio.

Lucien Sillevaerts, geophysicist with Schlumberger Well Surveying Corporation, Houston, en route to Borneo to assist in the reconstruction of oil wells, was among passengers aboard the clipper that left New York October 27 for London.

Clarence H. Smith of Tulsa, general manager of Tulsa Rig and Reel Manufacturing Company, was injured when his automobile struck a culvert near Hiawatha, Kansas, while returning from a hunting trip. He was admitted to a Horton, Kansas, hospital.

Deaths

George W. Whitman, pioneer Oklahoma oil man, died November 5, in Tulsa at the age of 93. He went to Oklahoma in 1907 from Findlay, Ohio, and followed the oil business through all of the Pennsylvania plays and into New York, West Virginia, Ohio and Indiana. He went to Tulsa after the discovery of the Glennpool and operated at Kiefer, Jenks and Sapulpa. He also had interests in Texas. He was born near Titusville, Pennsylvania, a short distance from the Drake well.

William B. Milton, Jr., district geologist for Houston Oil Company of Texas and immediate past president of the Houston Geological Society, was found dead November 4. Milton, 40, went to Houston in 1929 and was geologist for Gulf Oil Corporation for 15 years. Since 1944 he was district geologist for Houston Oil Company.

LIST OF
WEATHERFORD
PRODUCTS
CENTRALIZERS

Centers Casing in the hole reducing the possibility of mud or cement channeling.

Spiral Type—Agitates the mud column insuring circulation.

Standard Straight Type—Centers Casing with reduced mud agitation.

Close Tolerance Type—For centering casing in limited space (.075 inches to 1.50 inches). Manufactured to close tolerance specifications.

Gravel Pack Type—For centering Liners in gravel pack holes. Manufactured to close tolerance Specifications.

Cement Retaining Baskets

Prevents cement from settling down in well bore. Proven shale catcher on Liners.

Well Bore Cleaning Scratchers
(Split or Solid Band)

For positive well bore cleaning where possibility of irregular well bore exists. Used in conjunction with the Weatherford Centralizer. Made in close tolerance and standard types with any length bristle specified.

Manufacturers of

Packer Drag Springs, Valve Springs and Tong Pull-back Springs.

WEATHERFORD Spring Company

PHONE 257 WEATHERFORD, TEXAS

GETTING AROUND IN NEW YORK

is quick and easy when you're staying at The Roosevelt—just a short stroll from key business centers, shops, theatres. And Hilton service assures your comfort. Rooms with Bath from $4.50.

HOTEL ROOSEVELT
Dean Carpenter, General Manager
Madison Ave. at 45th St., New York.

Other Hilton Hotels Include
Chicago: The Stevens
Dayton: The Dayton-Biltmore
Los Angeles: The Town House
C. N. Hilton, President

HILTON

DIRECT ENTRANCE TO GRAND CENTRAL TERMINAL

Commodity Specifications

The United States Departmentof Commerce, Division of Codes and Specifications, National Bureau of Standards, Washington, D. C., announces publication of the *National Directory of Commodity Specifications*, in revised and enlarged form. The directory was first published in 1925 and then issued in revised form in 1932.

The publication contains more than 1300 pages of brief summaries of the contents of each specification, arranged according to a comprehensive plan, and tells where the specification may be obtained. The directory is now available to all who wish to have a complete compilation of standards and specifications of national significance.

Petroleum Trade

The United States Bureau of Mines, Department of the Interior, Washington, D. C., announces resumption of distribution of *International Petroleum Trade*, which was suspended for reasons of national security in 1942. The publication presents pertinent statistical data on international trade in petroleum and its products.

Mineral Trade Notes

Mineral Trade Notes, published by the Department of the Interior of the United States, and the Bureau of Mines, has resumed publication. The bulletin was suspended from general distribution in April, 1942, because it contained information that might have given aid to the enemy.

This monthly series of reports first issued in July, 1935, attained wide recognition as a source of valuable current information on metals and non-metals, both at home and abroad. Subscriptions can be obtained from the Bureau of Mines, Washington, D. C.

Pipe Line Design

Clark Brothers Company, Olean, New York, has published a bulletin on "Solving Problems of Pipe Line Design by Use of Significant Factors." The authors, C. L. Brockschmidt and M. L. Hager, have condensed the problems of pipe line design into orderly and workable equations. Brockschmidt is gas engineer, Foreign Division, Standard Oil Company, New Jersey, and Hager is connected with the War Production Board, Office of War Utilities, Gas Division, Washington, D. C. Copies of the bulletin may be secured from Clark Brothers.

War to Peace

The Office of War Mobilization and Reconversion, Washington, has issued a booklet, "From War to Peace—A Challenge," by John W. Snyder, director, which is designed to answer questions arising with the defeat of Japan. Copies may be obtained from the Division of Public Inquiries, Office of War Information, 1400 Pennsylvania Avenue, N. W., Washington 25, D. C.

Arc Welding

The Lincoln Electric Company, Cleveland, has published a booklet, "Building Your Career in Arc Welding," which outlines the Lincoln plan for training men as welders. Based on the belief that the welding industry is destined to grow to four times its present size, the Lincoln Company has established a plan to offer instruction and training.

Challenge to the Future

Byron Jackson Company, Los Angeles 54, California, has published "Horizons," a study in transition and a future perspective. The booklet is one of the most interesting histories of an industrial concern to come to the editor's desk in a long time. It deals with the history of the company, the developments of products known throughout the oil industry here and abroad, and pictures a fortitude, in the face of one of the world's greatest disasters, which is a challenge to the executive.

Machining *Plus* Hardness
You Get Both!

JPs Are Hard

JP Fluid Piston Rods are made from the finest rod material available (tensile strength of over 120,000 pounds per square inch) . . . and, JP Slush Pump Liners are made from high-grade steel forgings.

With these top-quality materials—expert oil country machinists grind and finish rods and liners to precision standards. In addition—each and every JP Rod and Liner is "hardened" by a Patented Process and individually inspected to pass 600 (or better) Brinell test.

Start NOW using JP Rods and Liners . . . You'll get satisfaction and service, PLUS!

Made to A.P.I. standards, JP Rods and Liners are available in all stock (and special) sizes to fit any pump. Hundreds of satisfied operators throughout the oil country will testify to the superb performance and lasting qualities of JP abrasive-resisting Rods and Liners.

WRITE FOR—Complete information regarding stock sizes and prices is available upon request. If you have a "special" job you need in a hurry—give us your specifications.

JP

J P Machine & Tool Company

1534 S. E. 29 **P. O. Box 4511** **Oklahoma City**
Tel. 3-8700

1—Strainer

J. A. Zurn Manufacturing Company, Erie, Pennsylvania, has perfected a "Y" strainer with a snug fitting strainer sleeve unit said to assure trouble-free operation on pipe line service.

The strainer sleeve is removable and

is so designed that it cannot get out of place or vibrate when in use, a feature which enables the unit to be installed in almost any position on a pipe line. When service conditions require, the strainer basket is magnetized for intercepting metal particles that are ruinous to valve seats and vital parts of operating pipe line equipment.

All units are hydrostatically tested according to the service pressures under which they will be required to operate. They are available with or without a cleanout plug, or can be furnished with a threaded blow-off connection.

The strainer is manufactured in cast bronze, steel, semi-steel or cast iron. A wide range of sizes is available for flanged, welded or threaded connections.

2—Three-Wheeled Truck

Toolcraft Manufacturing Company, Huntington Park, California, is marketing a three-wheeled truck, known as the Firebaugh Special. Designed to facilitate low-cost delivery, the truck handles

half-ton pay loads of 23 cubic feet and is capable of traveling 35 miles per hour. Gasoline consumption tests show 60 miles per gallon. Fluid drive gives ease of operation, and the motor is designed to use standard automobile parts. All speeds are governed by a foot throttle. Internal expanding brakes give a wide safety stopping margin and the low center of gravity assures constant balance.

Powered by a two-cylinder, four cycle, air cooled motor, this machine develops 8½ horse power. The engine has dual carburetion, valves in head, Timken front and rear main bearings, cast iron pistons, cast iron cylinders, and bronze alloy connecting rods.

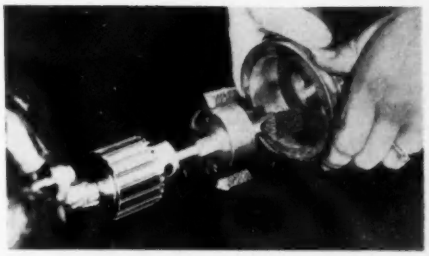
The Firebaugh Special weighs approximately 600 pounds, is 92 inches long, 50 inches wide, has a 66-inch wheel base, and a turning radius of 14 feet.

3—Power Brushes

The Osborn Manufacturing Company, Cleveland, announces a new series of "Situft" power brushes and brush holders, available in a variety of sizes, for cleaning, descaling, deburring, on small diameter inside surfaces.

The brushes can be used on both long and short shafts for close-tolerance operations.

One of the convenient holders fits into the standard ¼-inch air chuck of portable tools and an easy method has been



devised for inserting or removing the brush from holders with special pliers.

The brushes utilize a new principle of wire suspension under pressure and are made of a high grade crimped wire.

Use This Convenient COUPON for Additional Information

Check below the numbers identifying items on which you want additional information. Mail coupon to The Oil Weekly and your request will be forwarded to the manufacturer.

THE OIL WEEKLY
P. O. Box 2608, Houston 1, Texas, U.S.A.

Please have manufacturers send me, without obligation, more information on items shown in November 12 issue of The OIL WEEKLY as checked below:

1	2	3	4	5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20	21	22	23	24

In addition to information checked above, I would like more data on products or services advertised elsewhere in this issue by_____ Company

Name_____ Title_____

Company_____

Address or P. O. Box_____

City_____ State_____

(To avoid delay PRINT or TYPE clearly name, company and mailing address)

GASOLINE
DEEP-ROCK
MOTOR OILS

☆

DEEP ROCK OIL CORPORATION
TULSA, OKLAHOMA

UNIBOLT
THE ONE BOLT COUPLING

NOT BIG
BUT STRONG!

Size: 2"; **Weight:** 12 lbs.; **Test Pressure:** 6000 lbs.; **Safety Factor** (at 6000 lbs.): 7.3 . . . **that's UNIBOLT!** (A ring joint flanged union of the same size and test pressure weighs 54 lbs. and has a safety factor of only 6.5.)

★

THORNHILL-CRAVER COMPANY
HOUSTON

Care for Your Car—
for Your Country

☆

Oil Is Ammunition—
Use it Wisely!

Gasoline Is Cheap—
Only the Tax Is High

☆

MID-CONTINENT OIL & GAS ASSOCIATION

TULSA, OKLA.

Powerful BEAM
or Bright
FLOODLIGHT
WHEN YOU CARRY
ECOLITE 72

This is a safe, efficient economical lantern that gives you a strong 1500 ft. beam or a bright flood-light. It is easy to carry, tilts and pivots, gives you lots of light where needed. Carries Underwriters' Laboratories recommendation for use in Class 1 Group D Hazards. Low price. See it at once. At Oil Well Supply Stores.

ECONOMY ELECTRIC LANTERN CO.
3100 W. CHERRY ST. MILWAUKEE 8, WIS.

4—Tachometer

Metron Instrument Company, Denver, has developed a portable hand tachometer which is said to operate on an entirely new principle. It has no gears or gearshifts and is not a generator type.

The head consists of a set of contacts operated by the rotating shaft. It is claimed that the low driving torque, extreme stability, and the fact that the tachometer is equipped with two discs allowing six feet - per - minute ranges have increased its field of application to the maximum.

Two units comprise the instrument: the head which is the unit that is placed in contact with the rotating shaft, and the electrical indicating unit to which this head is connected by means of a flexible electric cable. The electrical indicating unit may be for portable use or permanent mounting, or may be of the recording type. The same head is used with any of these types of indicating units. In fixed installations, where it is desirable to monitor several rotating shafts at the same time, several heads may be used in conjunction with one indicating or recording unit with a manual switch for switching from one head to another, or a clock mechanism for switching periodically from one to another.

The rotating shaft which comprises the head unit operates a set of contacts through a positive, straight-line motion cam mechanism so designed to open and close the contacts periodically. The motion produced by this cam mechanism is only approximately 1/16 of an inch, and the cam mechanism is self-lubricating. The head is very light weight and small in size so that it can be placed in contact with rotating shafts when little space is available, which makes for convenience in installations of a permanent nature. In portable types a two-foot electrical cable is provided between the head and the indicating unit. The length of this cable can be almost anything desired, and in fixed installations may reach a length of several hundred feet.

The electrical unit may be operated from batteries or from a 115-volt AC power source, but the operation of either type is the same. The electrical unit consists of a reactance circuit in conjunction with a metering circuit so arranged that when the reactance circuit is energized periodically by the power source through the contacts in the head unit, the deflection of the indicating instrument is directly proportional to the speed of rotation of the tachometer itself. It is said that since the speed of rotation of this shaft and the battery or power supply voltage are the only two factors which influence the reading of the indicating instrument, the tachometer has a very high degree of accuracy, and normal wearing of the parts in the head has no effect whatever upon the calibration of the instrument.

5—Water Separator

Flotrol Systems, Inc., New York, announces the E-25 Excel-So water separator and filter for removing water, dirt, and muck from oils in storage.

The device is slightly over two feet

IMMEDIATE DELIVERY
6" BLACK LIGHT WT.
STEEL
PIPE

Plain end for welding and grooved for Victaulic coupling.

★ 750,000 ft. 6" I.D.—6¼" O.D.—⅛" Wall. Test 900 lb.—Pressure 650 lb. Weight—approximately 8 lbs. per ft. 35c per ft., carload lots. F.O.B. New Orleans, Louisiana.

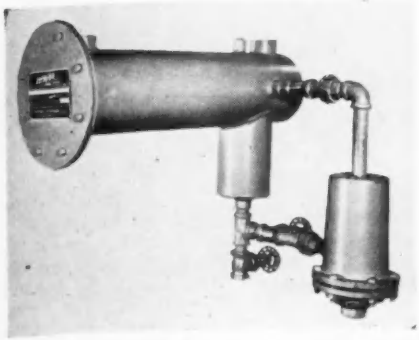
DEALERS INQUIRIES SOLICITED

For further information, write or call

GORDON IRON & SUPPLY CO.

Phone 7152
Wayside 2305 Navigation Blvd.
HOUSTON, TEXAS

long and can be mounted in close quarters. Capacity is from 25 to 1500 gallons per minute. The unit combines coalescing settling, and filtering. Water in amounts up to 6 percent of the rated



capacity can be separated out continuously and automatically, it is claimed, with even the most finely divided particles of water removed.

The oil flows at reduced velocity through a grid into the patented coalescing media, and large slugs of water drop to the bottom immediately. In the coalescing zone, the most finely divided water particles are joined with other particles, creating large globules. The product then passes into a settling zone large enough to permit all coalesced water globules to settle out. Water drains into the accumulator leg. Float valves automatically open the drain when water rises in the leg, and automatically close the drain when the water in ejected.

Use the Coupon

For free copies of Manufacturers' Literature or more information on products described on these pages, use the convenient mailing coupon on page 141.

Literature

6—Gas Turbines

Elliott Company, Jeannette, Pennsylvania, has published a booklet on gas turbines, "The Gas Turbine Power Plant—Now a Reality," which traces the development of the gas turbine. "A look into the future foresees the gas turbine as a principal form of power for ships, locomotives, and electrical generating plants, both utility and industrial. The gas turbine may even be adapted to buses, trucks, and automobiles—offering a real challenge to engineers," says the booklet.

7—Earthmoving Equipment

R. G. LeTourneau, Inc., Peoria, Illinois, and Stockton, California, has issued a new booklet on the company's earthmoving and construction equipment. The line consists of high-speed, rubber-tired, earthmoving, hauling and lifting tools.

Tivy Assistant Manager of Foxboro; Swanson Appointed

V. V. St. L. Tivy has been appointed assistant manager, oil and gas industries sales division of The Foxboro Company and has assumed his duties at the home offices in Foxboro, Massachusetts. He is a graduate from the Royal Naval Academy in England and had connections with Neal & Massy Engineering Company of Trinidad and the M. W. Kellogg Company before joining Foxboro.

Nels A. Swanson who has joined Foxboro as a sales engineer attached to the Los Angeles branch office, previously was with Goodyear Synthetic Rubber Corporation.

Dresser Acquisition of Security Firm Is Completed

Acquisition of Security Engineering Company, Inc., of Whittier, California, by Dresser Industries, Inc., was completed November 1 with the issuance of Dresser common stock to the holders of Security common stock, H. N. Mallon, Dresser president, announced today. Security manufactures rock roller bits for sub-strata drilling operations as well as oil field tools, specialties, and a patented metal for oil-well liners.

Eagle-Picher Buys Interest In Montreal, Canada, Firm

The Eagle-Picher Company, Cincinnati, has purchased a substantial interest in McArthur, Irwin, Ltd., Montreal, Canada. This expansion will enable Eagle-Picher to participate in the stepped-up industrial activities of Canada and the British Empire as they pertain to lead oxides and pigments in the paint, rubber, storage battery, ceramic and chemical trades.

Electro-Alloys Breaks Ground For Construction Program

Ground was broken recently for a $2,500,000 construction program at the Electro-Alloys Foundry, Division of American Brake Shoe Company, Elyria, Ohio. The program calls for a new alloy foundry, office building, and employes' building. The new foundry will be more than four times the size of the present one, with a capacity for 300 workers, as compared with the 100 now employed.

The new office building, 100x50 feet, will provide working space for employes now located in the Elyria Savings and Trust Building as well as the present staff at the plant. A two-story employes' building will contain a lunch room, shower and locker facilities and other accommodations for 300.

Failing Stores to Open

George E. Failing Supply Company plans to open two branch stores, one in a West Texas city and the other in Mississippi or Alabama. Parts now are being assembled at the main plain in Enid to supply the two new stores. Several field representatives are being added to the Failing organization.

Let's
TALK TURKEY

☆

YOU CAN
Eliminate and Prevent
Boiler Scale & Corrosion
SAFELY — And
AUTOMATICALLY

☆

Just Consistently Use
SAND-BANUM

"The Entirely Different Boiler and Engine Treatment"

Make every day a "Thanksgiving Day" for increased operating efficiency and reduced fuel costs.

The action is entirely automatic and absolutely safe to personnel and equipment — comes ready to use.

Get the Facts
Backed By
A 19 Years' Record

AMERICAN SAND-BANUM COMPANY, Inc.
9 Rockefeller Plaza, New York City 20

Stocks carried by
WESTERN SAND-BANUM COMPANY
Houston, Texas

and at other convenient points including leading supply houses

Export Representatives
PETROLEUM MACHINERY CORP.
30 Rockefeller Plaza New York City 20

William M. Barret, Inc.
Consulting Geophysicists

Specializing in Magnetic Surveys

Contracts accepted for domestic and foreign projects, using the most improved instrumental and interpretative technique

GIDDENS-LANE BUILDING
SHREVEPORT, LOUISIANA

Mailing Lists—Personnel of Producers, Refiners, Natural Gasoline-Cycling plants, Oil and Gas Pipe Lines, Drilling Contractors, Supply Stores, Machine Shops. Write for catalogue. **Oil Industry Mailing List Company.** Tom Robinson, Mgr., 319 Castle Bldg., Tulsa 3, Okla.

HOUSTON LABORATORIES
Analytical and Consulting Chemist
Podbielniak Gas Analysis

Oil Field Brines, Waters and Cores
Complete Evaluation of Crude Oils

Long Distance 267, Box 132, Houston, Tex.

THE FORT WORTH LABORATORIES

Analysis of oil field brines, cores, gas, oil and minerals. Field gas testing. R. H. Fash, Vice President; Long Distance 138 823½ Monroe Street, Fort Worth, Texas

W. P. JENNY
Consulting Geologist and Geophysicist
Specializing in MICROMAGNETIC SURVEYS, GEOLOGICAL INTERPRETATIONS and CORRELATIONS of seismic, gravimetric, electric and magnetic surveys.
Charter 4-4777 — 1404 Esperson Bldg.
Lehigh 0940 — HOUSTON, TEXAS

BAIRD
SINGLE SEAL SEAT — SEATS and BALLS — DOUBLE SEAL SEAT
- Available in a grade to meet the individual well pumping problem.
- Furnish longer continuous runs.
- Fewer pulls for replacement.
- Insure more fluid lift economy.

Sold thru Supply Stores
BAIRD MANUFACTURING COMPANY
OIL WELL PRODUCTION EQUIPMENT
TULSA

BE SURE TO CHECK THE

TRADING POST SECTION

ON PAGE 134 OF THIS ISSUE

Survey Shows 140,000 Gas Producers, Royalty Owners

A survey conducted recently by the Independent Natural Gas Association of America, indicates that there are approximately 140,000 persons directly interested in the production of natural gas.

Of 270 questionnaires mailed out by the Association to individuals and companies purchasing gas, 230 replies showed that they purchased gas from 11,074 producers and pay royalty to 129,328 owners.

INGA says the figures are approximately correct because oil companies producing gas with oil were not included in the survey.

Kansas-Oklahoma Division Is Headed Again by Porter

Frank M. Porter, president, Fain-Porter Drilling Company, Oklahoma City, was re-elected to a third term as president of the Kansas-Oklahoma Division, Mid-Continent Oil & Gas Association, at the annual meeting held in Tulsa.

Other officers re-elected include: L. G. Owen, Tulsa attorney, first vice president; Carl Weiner, Chanute, Kansas, vice president for Eastern Kansas; A. W. Ambrose, Bartlesville, Oklahoma, vice president for Northern Oklahoma; Lloyd Noble, Ardmore, Oklahoma, vice president for Southern Oklahoma; W. R. Wallace, Oklahoma City, vice president for Western Oklahoma. H. E. Zoller, Derby Oil Company, Wichita, was elected vice president for Western Kansas, succeeding E. B. Shawver, Wichita, who declined renomination.

Clarel B. Mapes, Tulsa, was re-elected secretary-treasurer.

Life membership in the association were conferred on Louis Campbell, retired former executive of the land and production department, Magnolia Petroleum Company, Oklahoma City, and D. B. Catterline, retired, formerly in the accounting department of Gulf Oil Corporation at Tulsa, and now a resident of Prairie Grove, Arkansas.

Advertisers' Index

EDITORIAL INDEX, PAGE 49

* Indicates detailed information on products and services included in 1943-44 edition of Composite Catalog of Oil Field and Pipe-Line Equipment.

Aero Exploration Co. 109
*The Aldrich Pump Co. 10
*Altens Foundry & Machine Works 130
Amerada Petroleum Corp. 127
American Cyanamid & Chemical Corp. 24
*American Locomotive Co. 2 and 83
*American Roller Bearing Co. 128
*American Sand-Banum Co. 143
*B & W, Inc. 137
*Baash-Ross Tool Co. 59
Baird Manufacturing Co. 144
*Baker Oil Tools, Inc. 50
Wm. M. Barret, Inc. 144
Beaumont Well Works Co. 138
*Bethlehem Supply Co. 71
*Bowen Company of Texas 111
*The Clarence L. Boyd Co. 109
Briggs & Stratton Corp. 133
*Browning-Ferris Machinery Co. 93
Al Buchanan Drilling Contractor 131
*The Buda Co. 4-5
*Butler Manufacturing Co. 42
*Cameron Iron Works, Inc. II Cover
*Chicago Bridge & Iron Co. Insert 112-113
City National Bank (Houston) 18
*Clark Bros. Co. Insert 16-17
W. L. Clay 111
*Climax Engineering Co. 65
*Coffing Hoist Co. 116
The Continental Supply Co. 91
Deep Rock Oil Corp. 141
David Donoghue 138
*Dresser Industries, Inc. 45 and Insert 16-17
*E. I. du Pont de Nemours & Co. 16
East Texas Electric Steel Co. 9
*Economy Electric Lantern Co. 142
*Emsco Derrick & Equipment Co. 67
*Engineering Laboratories, Inc. 127
*Exner-Dodge, Inc. 129
*Fairbanks, Morse & Co. 3
Ft. Worth Clearing House Association 119
Ft. Worth Laboratories 144
*The Foster Cathead Co. 7
Franks Machine Co. 6
Frost National Bank of San Antonio 115
*The Garlock Packing Co. 123
*General American Transportation Corp. 88-89
*General Electric Co. 12-13
General Welding Works 106
The Globe Oil & Refining Co. 14
Gordon Iron & Supply Co. 142
*Grant Oil Tool Co. 92
*Gray Tool Co. 98
*The Guiberson Corp. 37
*Gulf Coast Machine & Supply Co. 15
Tom Hafer Co. 108
Leland Hamner Co. 138
Harrison Equipment Co. 136
Helmerich & Payne, Inc. 120
Houston Equipment Co. 108
Houston Laboratories 144
Houston Lighting & Power Co. 8
*Hughes Tool Co. I Cover
*International Derrick & Equipment Co. 45
J. P. Machine & Tool Co. 140
W. P. Jenny 144
*Jensen Brothers Manufacturing Co. 114
*Jones & Laughlin Steel Corp. 96
Jones & Laughlin Supply Co. 25
*Kerotest Manufacturing Co. 56
*Lamtex Equipment Corp. 108
*Lane-Wells Company 85
*Link-Belt Co. 1
Lion Oil Co. 115
*The Lufkin Foundry & Machine Co. 19
Mack Trucks, Inc. 87
*Maloney Tank Manufacturing Co. 48
Marmon-Herrington Co. 32
*Martin-Decker Corp. 73
*McCullough Tool Co. 17
*McEvoy Co. 28-29
Mid-Continent Oil & Gas Association 142
Mid-Continent Petroleum Corp. 34
*Miller Sand Pump Co. 93
*Mission Manufacturing Co. IV Cover
*Lee C. Moore & Co. 27
Frank W. Murphy 132
Murphy Diesel Co. 124
*The New Deal Specialty Co. 31
North American Geophysical Co. 132
*Oil City Brass Works 117
Oil Industry Mailing List Co. 144
Oklahoma Natural Gas Co. 43
Owen Tool Co. 129
*The Parkersburg Rig & Reel Co. III Cover
*Patterson-Ballagh Corp. 75 and 136
*Pelican Well Tool & Supply Co. 122
*Penberthy Injector Co. 99
Petroleum Electric Power Association 94-95
*Reed Roller Bit Co. 60
Republic Steel Corp. 11
Republic Supply Co. 20-21
*The Ridge Tool Co. 111 and 123
Robinson Packer Co. 46
*John A. Roebling's Sons Co. 80-81
*Rollway Bearing Co. 40
Roosevelt Hotel 139
Rouse Exploration Drilling Co. 136
*SKF Industries, Inc. 30
Sheffield Steel Corp. 131
Shilstone Testing Laboratory 130
Skelly Oil Co. 33
*Southern Mill & Manufacturing Co. 44
Standard Oil Company of California 26
Standard Supply & Hardware Co. 125
*Standco Brake Lining Co. 47
Sterling Engine Co. 41
*Tank Seal Products Co. 35
Texas Electric Steel Casting Co. 23
Texas Foundries, Inc. 38
Thompson-Hayward Chemical Co. 129
*Thompson Pump Co. 36
*Thornhill-Craver Co. 142
Trading Post Section 134
*Tretolite Co. 121
*Union Wire Rope Corp. 39
*Warren Automatic Tool Co. 126
Weatherford Spring Co. 139
*The Wheland Co. 22
O. C. Whitaker Co. 118
Williams Bros. Corp. 32